Cycle

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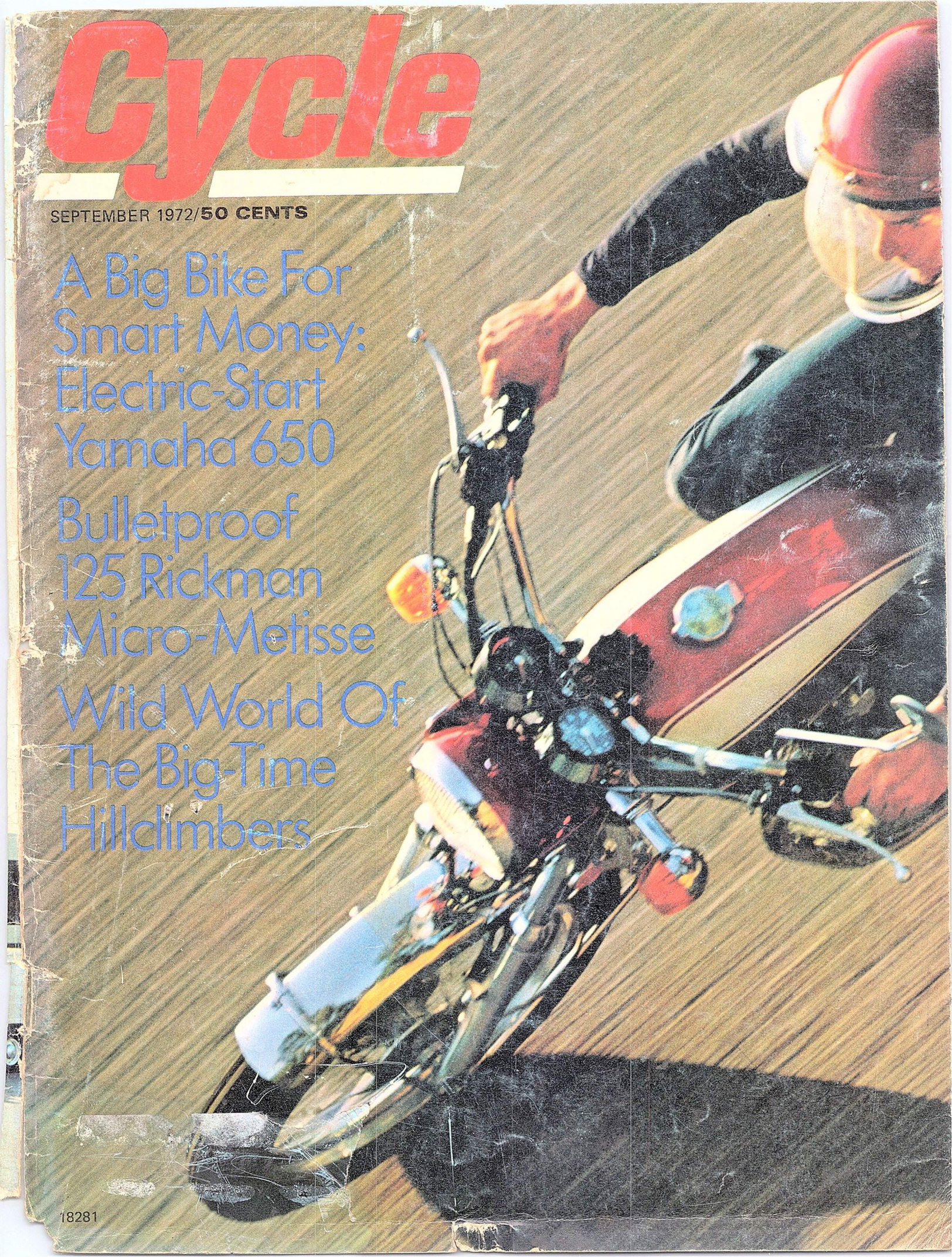

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rear	3.00-18
Lubrication	SUPERLUBE
Ignition	Magneto

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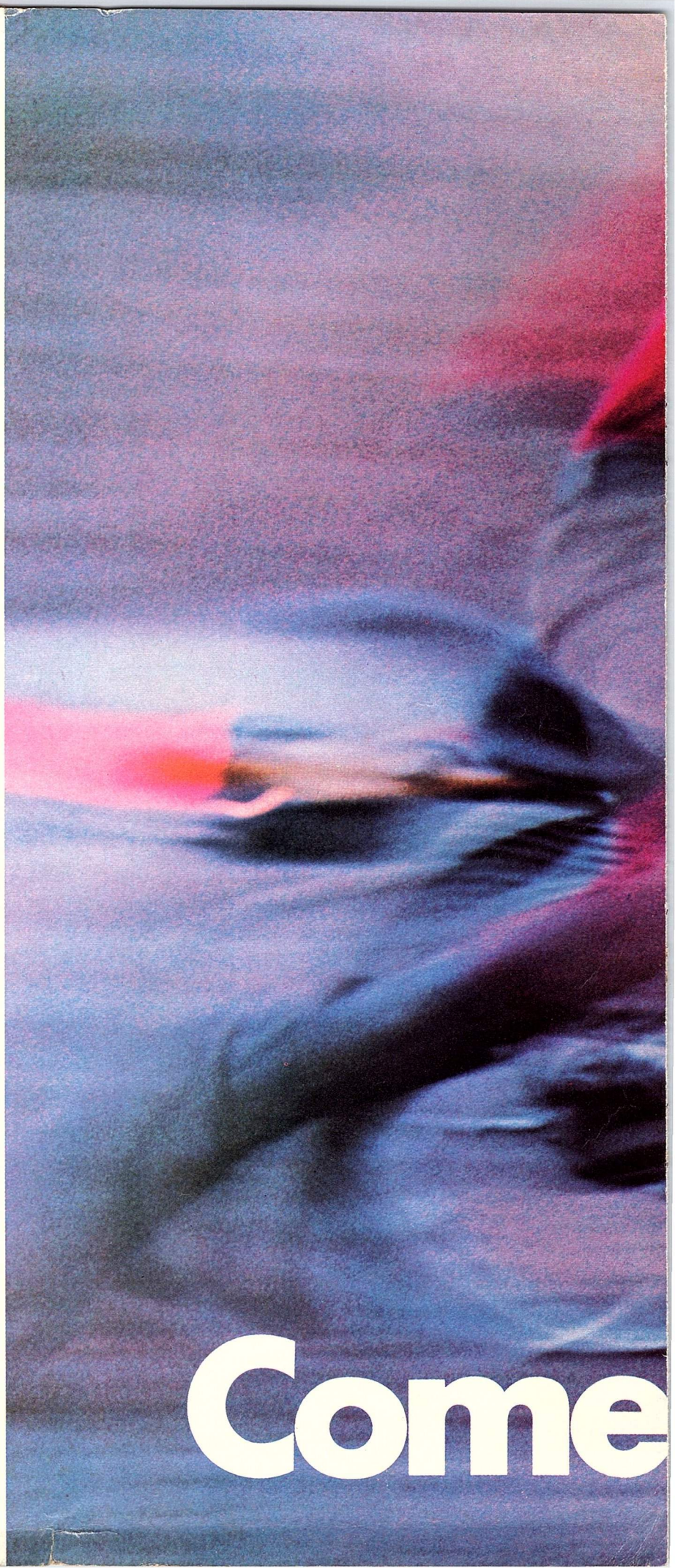

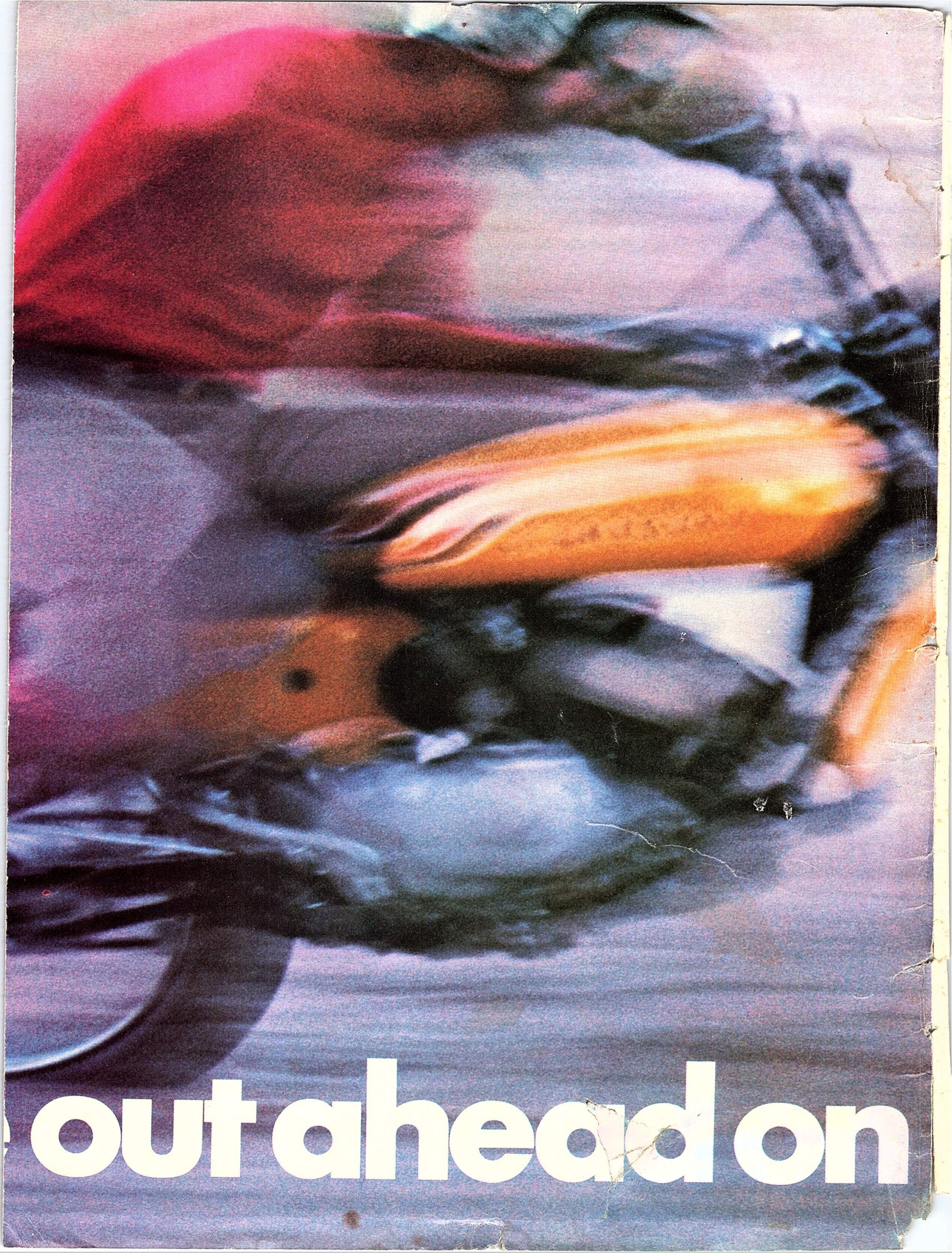
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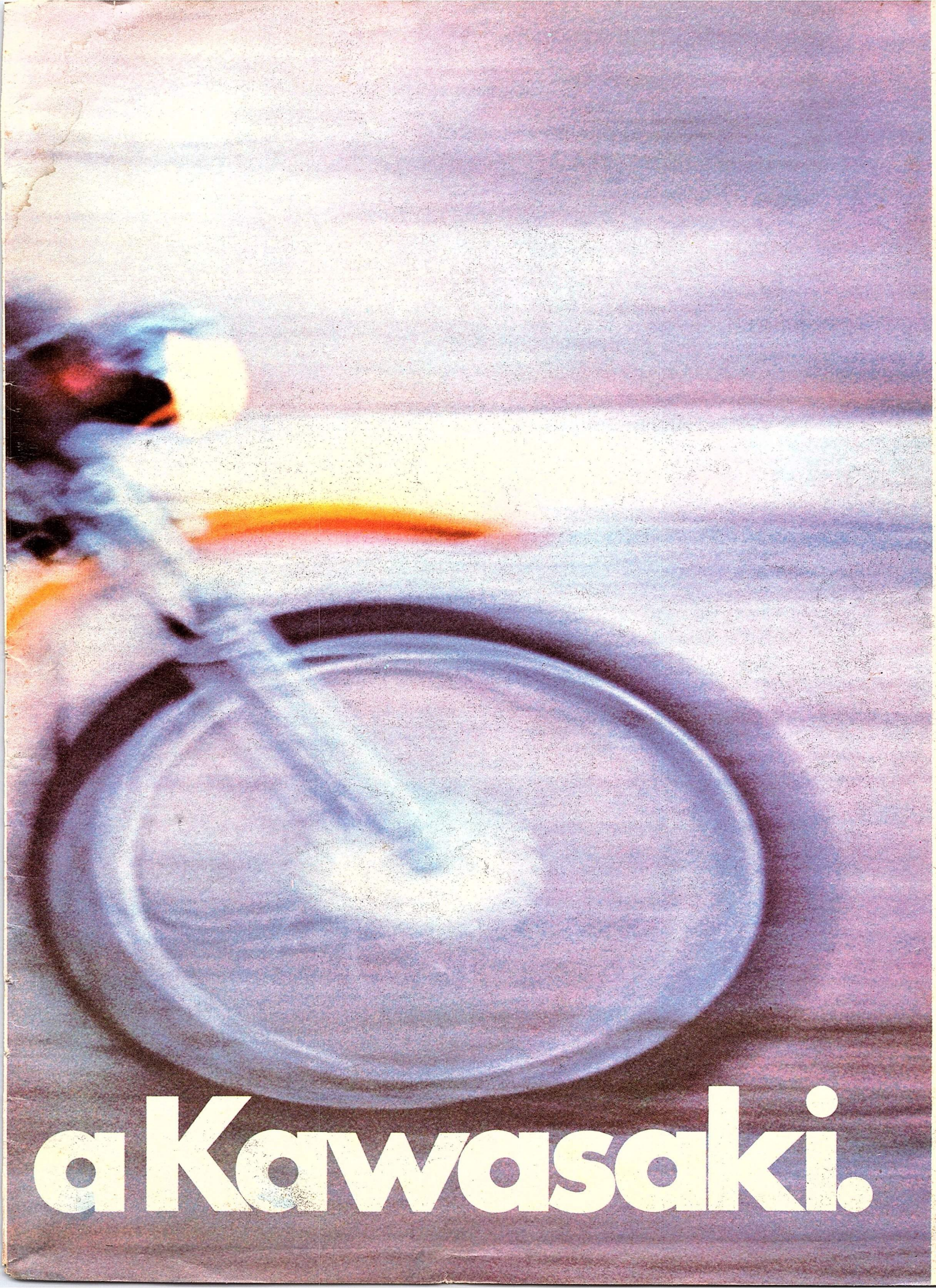
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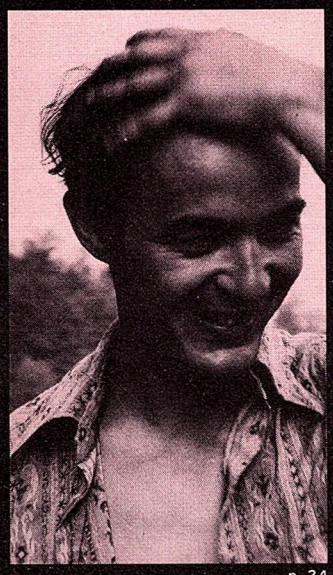
Cycle

September 1972 Volume XXIII No. 9



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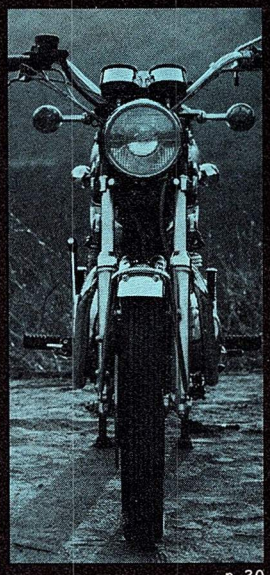

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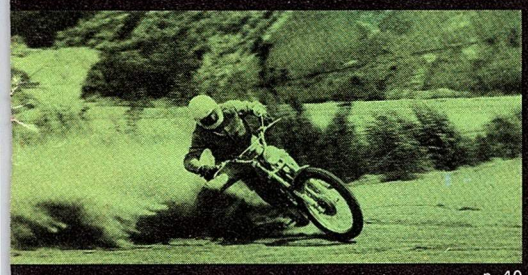

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This Month's Cover: Viewed from the top, it's Yamaha's XS-2, a greatly refined version of their basic 650. Cover Photography by Larry Willett.

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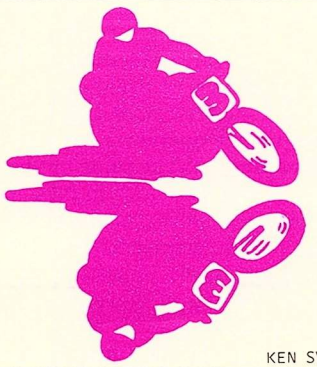

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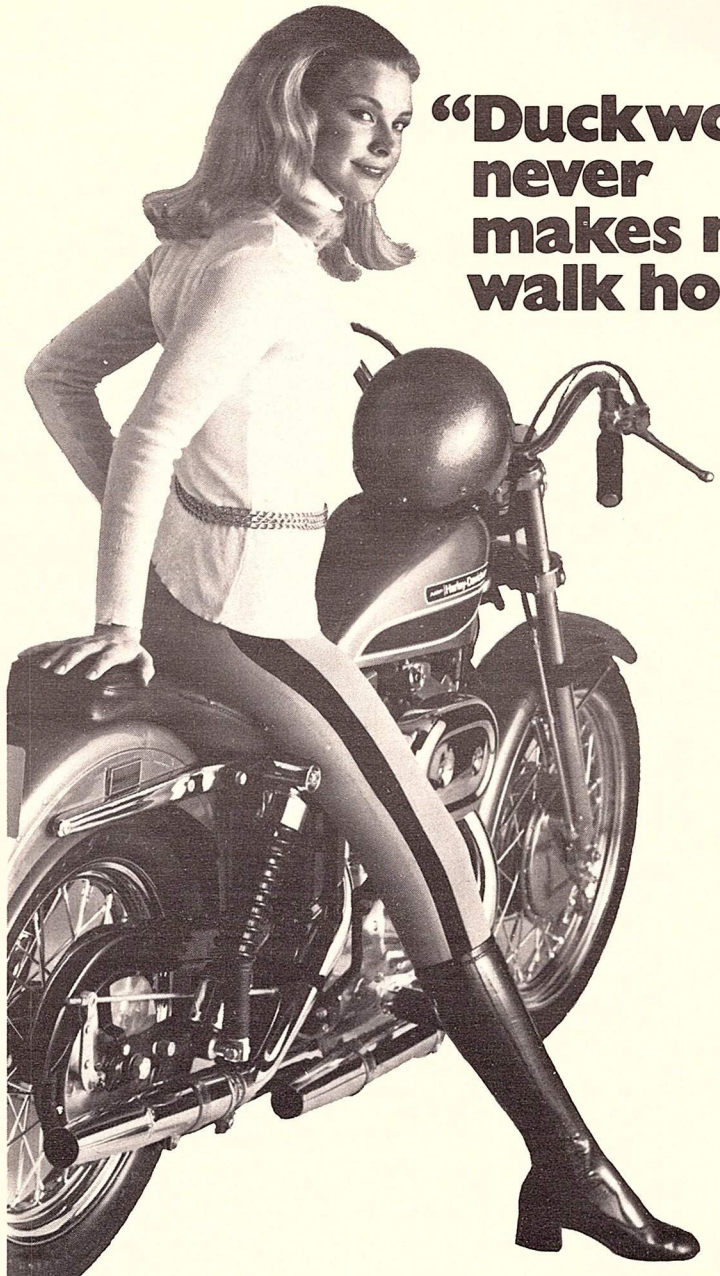

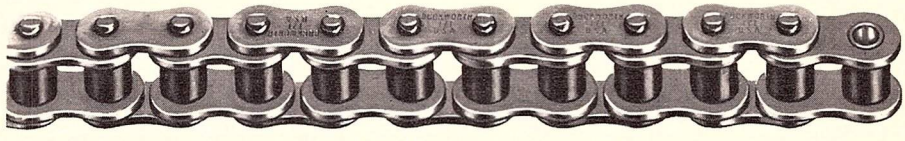

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CIRCLE NO. 33 ON READER SERVICE PAGE

Editorial

California!

• Friends told me before I moved to California that I would miss New York, that I would experience withdrawal symptoms, that sooner or later I would crave the nervous, unpredictable, inconsistent wallop that New York packs, that the easy, polite, relaxed structure of California would catch me leaning forward against no resistance—the kind of resistance which one grows accustomed to in New York. As I sit here in the roomy, cool, carpeted offices of our new California editorial operation, a handspring away from Indian Dunes and a few long cartwheels from the desert and a quick jaunt through the Malibu Mountains from the Pacific Ocean, I wonder about those friends from New York.

Certainly the City has an energy, a drive, like no other city in the United States. But what kind of energy? It has been written by people with far more intellectual horsepower than I that New York is fueled by the anxieties and ambitions of the sharpest, most aggressive, most creative people in the country; that New York, as the communications center of the world, lies at the epicenter of the universe; that by comparison Los Angeles is a cultural graveyard; that New York makes such inroads over a period of years into the psyches and souls of its go-go inhabitants that once they leave they are drawn mystically back to it like addicts to an opium den.

I wonder. I wonder about that fabled New York energy. After five and a half years, it strikes me that the energy was more the result of greed than ambition, more desperation than creativity, more perversity than cleverness, fueled more by a fear of getting run down from behind and trampled than a Protestant desire to get ahead. Everywhere you go you pay your dues: in North Dakota you live with bitter, cruel, long winters; in Los Angeles you live with heat and traffic jams and smog of a thickness and color that is terrifying; but in New York, the dues are debilitatingly high. You get robbed a lot. It costs you as much as $8.00 a day to park your truck; you hang out in the subways and sweat in the summer and freeze in the winter; the cost of living, next to Alaska and Hawaii, is the highest in the nation; and soot floods in through the windows and under the doors until it stands so thick that you can use it to grow potatoes. If you're lucky, or fast on your feet, you escape getting mugged, but you know a lot of people who aren't, and didn't, and they show up for work with black eyes, no wristwatches, and knots erupting from their heads, and often they need a loan.

It is a hard city from which to publish a motorcycle magazine; worse, it is a hard city in which to own a motorcycle. A guy, paying a lot of money to a garage to park his bike on a monthly basis, would come to pick it up some fine spring morning and it would be . . . gone. No one in the garage would know a thing about it—they would just barely know you, even though you had been parking there for a year or two. Guys who are serious, dedicated motorcyclists in New York City carry with them chains big enough to anchor a freighter, and when they park they chain their bike to everything in sight. Sometimes it helps; sometimes not. There was a fellow who lived across the street from me down on Canal Street. Played in the band for the David Frost Show. Owned a Honda 350. Name of Richard. Now Richard, a long-time New Yorker, would park his Honda up on the sidewalk and chain it to this rail made out of steel tubing about two inches thick, I think he might have used two chains, as a matter of fact. Wasn't near enough. He walked out one afternoon and noticed that his mirrors were gone, his horn system was gone, and so was his battery.

Later, just before I left for California, he bought a new Honda 500. Gorgeous motorcycle. I wonder how long he'll keep it.

More practical New York motorcyclists, but less devout, gravitate towards bikes with a little less resale value, a little less appeal. Bikes like old, old Jawas and Honda Dream Tourings and ancient, tattered BMW 250s. The bikes are kept in running conditions, but not much more. The seats are torn. The spokes are rusty. The chrome has flaked off. The tires are bald. The engine resides under a layer of soot and grease. The chain is kinked and rusty. The only reason the forks and shocks don't leak a lot of oil is that all the oil has already leaked out. Footpeg rubbers are gone. The front brake cable is gone. The sidestand and centerstand are gone. All the emblems have disappeared from the gas tank. The bikes serve, I suppose, as some sort of transportation, which makes them unique in all the United States, because nobody buys a motorcycle for transportation. They may give that as a reason to their wives, but they know better, and so do their wives, and so do you and I. But in New York, the motorcycles in general have no other function. Certainly they have no other appeal. Appreciation of fine equipment, finely tuned? No way. Something you enjoy working on? You've got to be kidding.

No, New York does to its motorcycles what it does to its inhabitants: it drives them down, puts age on them, wears them out, drains them.

My friends told me that I would find California plastic and shallow and free of the challenges that New York offers without even thinking about it. They told me I would miss the theater and opera and the museums. While I was there I agreed with them: sure am gonna miss that ol' *opera*, all right. But I don't, because I never went to the opera in the first place. I don't miss the theater, for the same reason, and for the same reason I hardly miss the museums now.

Certainly California has its problems. It takes an hour to get from anywhere to anywhere else (but in New York there wasn't anywhere to go except California, and that took six and a half hours). It has traffic jams that rival in length the ones in New York and are three lanes wider (but the traffic jams in California are seldom caused by a snowstorm, or a walkout by all the drawbridge operators, or a strike by the toll-collectors). The smog out here can be nasty as hell (the smog in New York is worse, but the buildings are so tall that you can't see it). The summers are hot (in New York it's practically impossible to ride a bike from the first of November until the end of March, because it's too cold). Some of the freeways out here have grooves cut in them, and they make motorcycles shake around a bit (in New York there's no such thing as a freeway, and the tollroads, instead of grooves, use potholes, aging winos, garbage cans, and manhole covers for additional traction). It doesn't rain enough out here, and now and then the hills catch on fire (in New York, if the welfare showers are insufficient, the buildings catch on fire). I suppose out here I'll miss the changing seasons (as my compatriot Gordon Jennings said after his departure from New York, "Yeah, California weather is a real bitch. One goddamned perfect day after another"). Christmas in 70 degree weather is going to seem peculiar (the day before Christmas last year I dashed into Macy's to do some last-minute shopping. Was gone for 15 minutes. When I came out my car had been towed away. Cost me $20 for the parking fine, and another $50 to get my car out of the lock-up, where it had been messily searched by a bunch of cops).

California! The West Coast. God, I'm glad I'm here. —*Cook Neilson*

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250 Class, Second	• Dave Latham	• OSSA Pioneer
250 Class, Third	• Bill Perry	• OSSA Pioneer
Open Class, First	• Dave Eames	• Yankee 500
Open Class, Fourth	• Barry Higgins	• Yankee 500

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MIC WE BELONG

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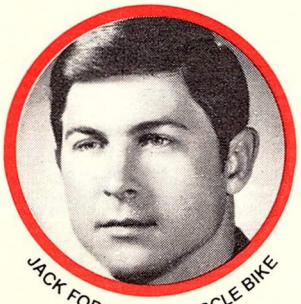
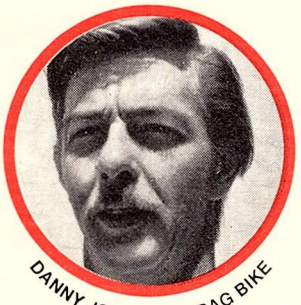

JACK FORRESTER/CIRCLE BIKE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CIRCLE NO. 34 ON READER SERVICE PAGE

Letters

Shouts of Wrath

ON MR. MICHEL'S MODEST PROPOSAL

Being an avid road rider as well as a dedicated trail rider I can only respond with shock and utter disgust to the self-righteous egoistical arrogance of D. L. Michel (*Cycle*: July, 1972). To begin with, I find it incredible that one person, especially one with a uni-dimensional outlook such as his, can claim to have knowledge about the single unitary cause of motorcycle unpopularity. First of all Michel, as with all other things, there is no simple answer to why motorcycling is still somewhat less than an absolutely legitimate activity. One thing is clear however: dirt riders are no more to blame than road riders, around the town riders or any other sub-group of bikers for this condition. I have heard just as many unfavorable criticisms about a group of 74 riders on an organized road ride as I have about a careless trail rider or a noisy chopper rider (who are road riders too, Michel, pursuing their own legitimate interpretation of the sport). Like it or not, we are all to blame, just some more than others. We have to clean up our own nest, Michel, not turn on our own people. It would be very easy for myself, on my BMW, to adopt your self-righteous attitude toward almost all other motorcycles, claim they are too noisy, and therefore seek to have all except the ultra-quiet bikes outlawed. The patent idiocy of this is as blatant as your own idiocy Michel.

All phases of the sport have some who are irresponsible and who hurt all others in motorcycling. Michel, your attitude is the most irresponsible thing I have ever seen coming from a motorcyclist. Michel, if you are willing to sacrifice virtually half of motorcycling, i.e. off-road riders, to "improve our image" then I don't think you are worthy of considering yourself a motorcyclist.

In closing Michel, if you want to see the real sources of environmental destruction, why don't you look at the millions of acres of land that are destroyed to build *paved* roads; why don't you look at housing developments, at factories, at mining industries, at lumbering and paper mills, at ski areas. Michel, why don't you simply open your eyes?

Bob Bolin
Boulder, Colorado

Mr. Michel overlooked a basic fact when he wrote his "open letter to all road riding motorcyclists" in the July issue. The fact is that the average American cannot tell the difference between a street bike and a dirt bike. Many times people have asked me if I ride my Honda CB450 in the dirt just because of that fact. Anyone familiar with motorcycles knows that stock CB450s are not dirt bikes. If you give or even encourage the government to outlaw one kind of motorcycle, you also give them the option or precedent to outlaw all motorcycles, an idea many legislators would readily accept. The answer lies in the "Less sound, more ground" campaign and the acceptance of more responsibility by off road riders, as well as group pressure brought to bear on offenders of the needed noise and common sense ethic.

I traveled 30,000 miles on my Honda in the last eighteen months, and have run into many cases when the dirt riders' neglect caused me problems. However, I defend their right to ride because I know that their right is my right, one and the same. I actively support the California lobby group, Motorcycle Owners, Riders, and Enthusiasts, and constantly write letters to my representatives in Sacramento defending their right, for I know that the heading over Mr. Michel's letter was most fitting: "Divided We Fall". *Motorcycle Riders Of The World, Unite!!!* Let us never give the opponents of motorcycles the first step, for the second and third steps to the outlawing of bikes will be the easiest.

John D. Ulrich
La Mirada, California

I am a dirt and road rider, and the letter by Mr. Michel in the July issue bothered me. That type of thinking would probably do more harm to motorcycling than any amount of thoughtless dirt riders.

The only way we as motorcyclists will have any power is as a unified body. Not separate factions all watching out for our petty interests and not being concerned with motorcycling as a whole. If this is the case, we will be left with nothing.

As a dirt/road rider, I can see what each has to offer; I don't think Mr. Michel can honestly knock dirt riders for running unmuffled machines when there are road bikes running straight pipes and cut-out mufflers. I realize that this kind of reasoning won't phase him, because he'll probably just disown them too, but it is a fact.

I enjoy all types of riding, and I don't think there is a need to defend or downgrade any of them. I prefer dirt, but if you can really dig road riding, more power to you, but don't try to step on us for your own interests.

Bill Zaidan
Pearl River, N.Y.

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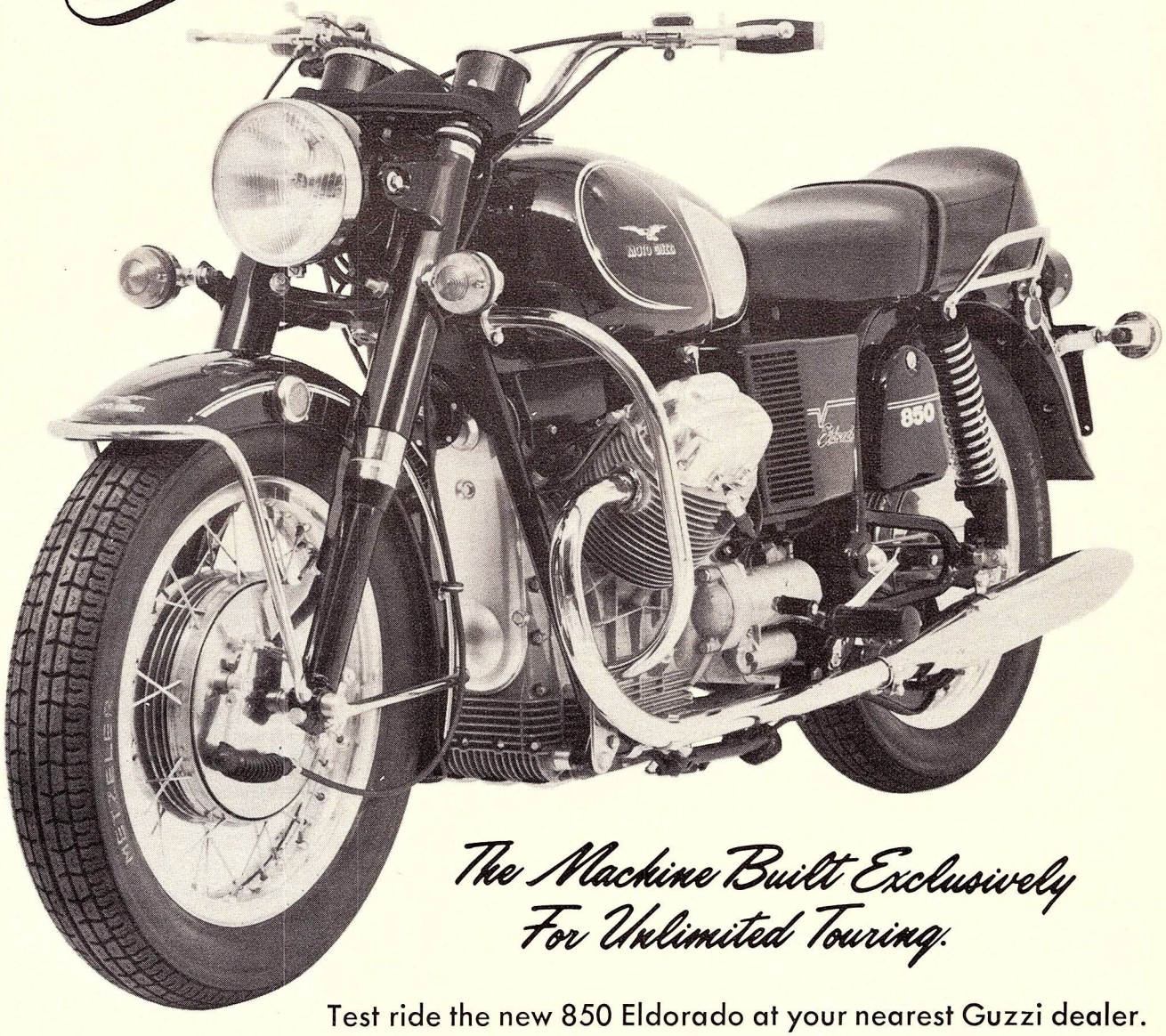

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I have just finished reading the letter from David L. Michel, and I am mad. What nerve that guy must have to say "ban all off-road motorcycles."

Most street riders (not all) are pansies. They usually start riding by going to their nearest dealer and buying the first bike they see. They don't have any guts or riding talent. If a street rider were to get on a dirt bike he probably couldn't go ten feet off-road without taking a wicked endo. Off-road riding is where it's at. An off-road rider could hop on a street bike and run rings around a street rider.

Kevin Foley
Fairfield, N.J.

I am writing this to comment on Mr. David Michel's letter. Motorcycling is still a respectable activity and means of transportation, more so than ever before. I don't know where you got the idea that the off-the-road rider got you such a bad reputation because of noise. The public doesn't hear us because we're what you said: off-road, desert and dirt motorcycle riders. You are the ones they (the Public) sees around town. As for us eroding the land, remember streets have to be repaved once in a while. If the government would set up motorcycle parks, it might help the problem. As for confiscating people's motorcycles, things ain't that bad. We ain't communist. How many people are sympathetic to Mr. Michels proposals? Not too many. There aren't that many lunatics loose.

Pat Ashley
McAllen, Texas

MICHEL SOULMATE

Cycle—July, 1972, Page 10—I agree with David L. Michel. However, not just motorcycles, dune buggies, too.

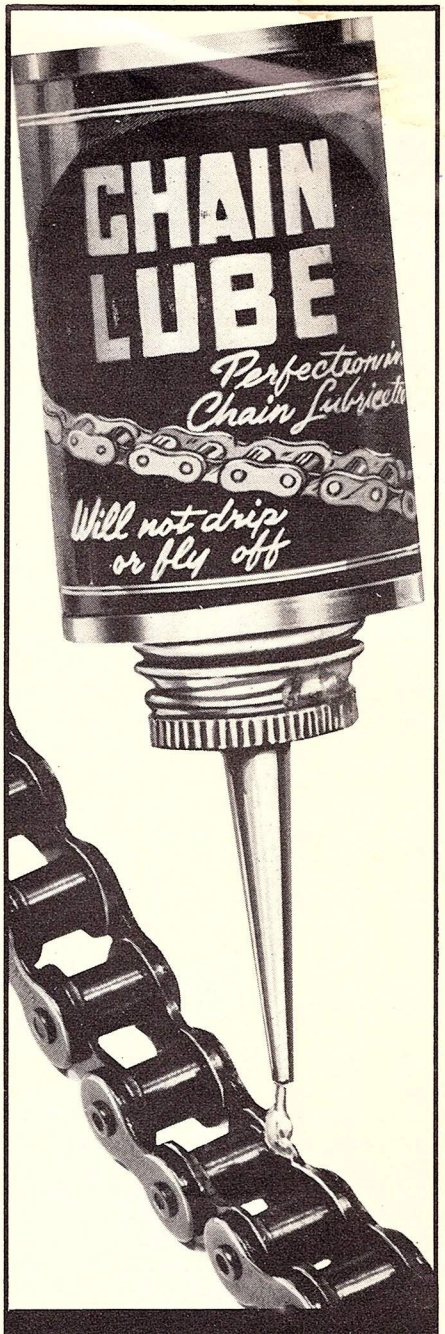
Melba Kissell
Los Angeles, California

SHUTDOWN

I just read on the BMW R 75-5 which tells of your undaunted hero cruising at 90 and laughing, passing the truck even though there was a car coming, and then finding it reasonable to be mad at the car and passing the string of campers by shooting down the center line of the road. This is not what we need to reduce this hatred of bikes. I have been in a community where a law was passed setting 25 mph as maximum for all cycles (the officer was supreme judge as to whether he should enforce this law), where if you turned off a major throughway after 10 p.m., you turned off your cycle and pushed it, or if caught, you'd be fined. These laws may come in more and more places unless *all* of us riding exercise some common sense and enjoy the cycle for what it is.

Won't you help by discouraging such stories and examples as given in this story? We don't need the attention of cycle haters called to this, they see enough to keep them mad.

Also, if you print this, I challenge others



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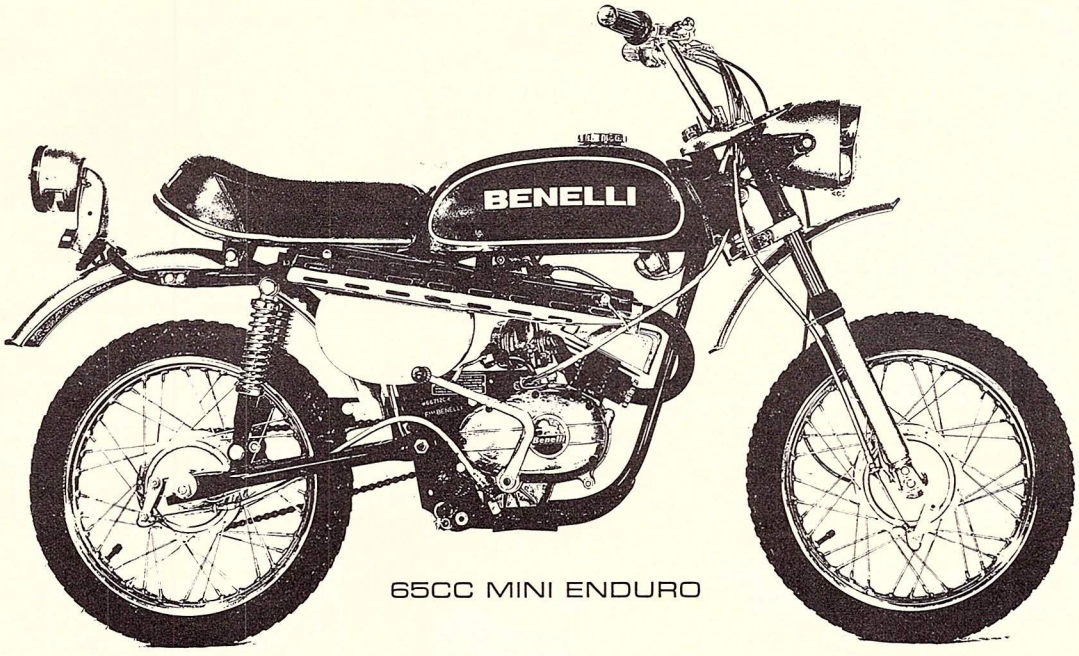

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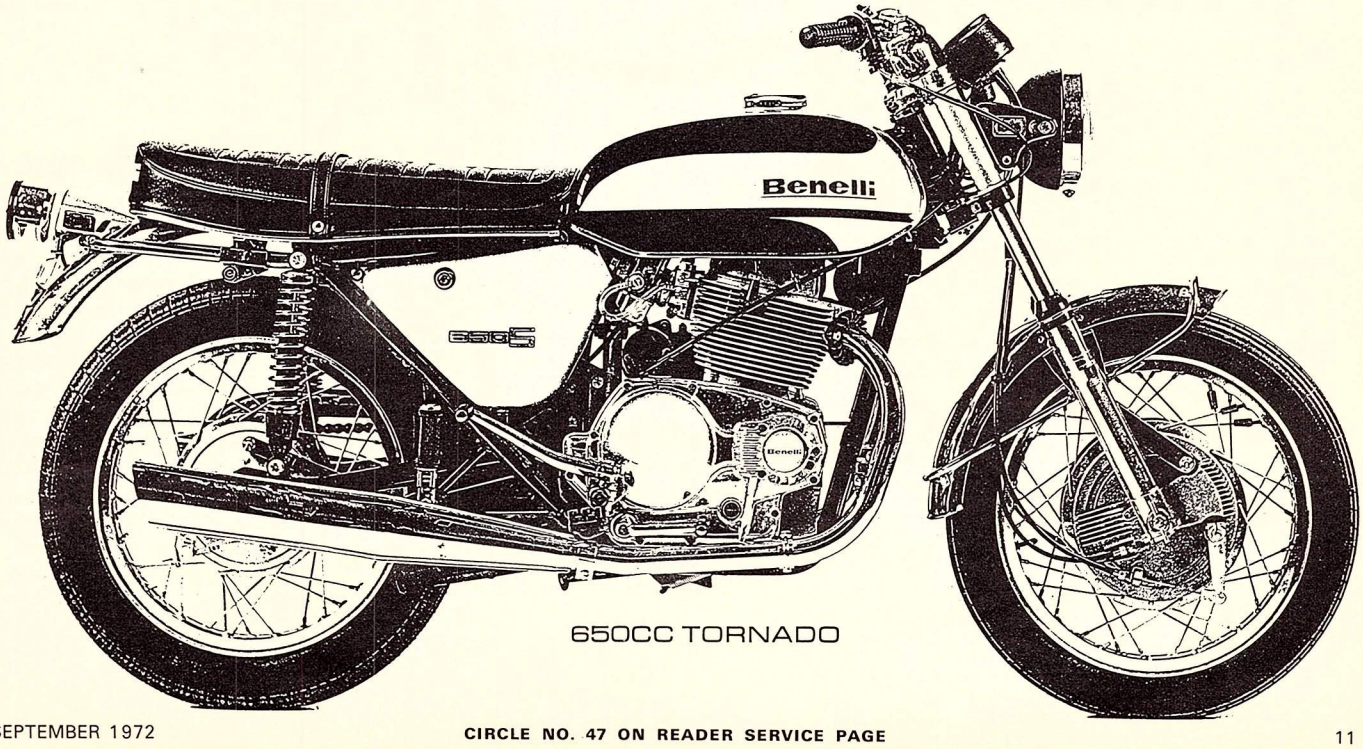

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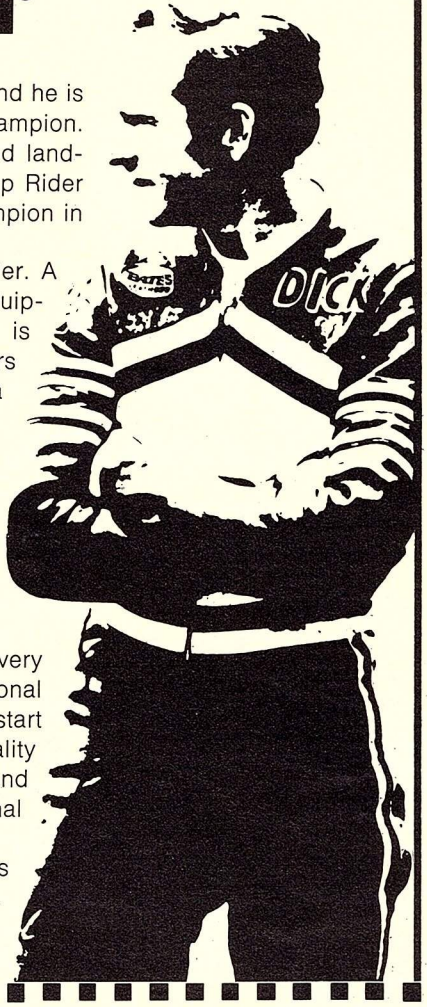
Mann of the year



Dick Mann looks like a Champion . . . and he is a Champion, current Grand National Champion. Cycle Magazine's Rider of the Year and landslide winner in Motorcycle Weekly's Top Rider vote. He was also Grand National Champion in 1963.

"Bugs" is a cool and calculating rider. A thinker. Meticulous in his choice of equipment . . . he won't use anything that is second best. Dick wears Bates Leathers because of four factors important to a racer. *Protection*—vital to a man going 170 mph on two wheels. *Fit*—each garment is custom made and tailored to the individual's measurements. *Comfort*—soft, supple leather that's like a second skin. And *Appearance*—a Champion wants to look like a Champion.

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51

to write their support if they ride as they should and those that don't, won't you reconsider some of the things you do that you know make people made. If I can get this worked up as a cycle lover—think what a cycle hater might do.

Charles Dennieton
Anderson, Indiana

FROM THE ARCHIVES

There's no doubt in our mind that you are all fine conscientious people at *Cycle* Magazine, and we read with great enthusiasm your article about the Webco converted Hodaka engine. However, we'd like to point out some historical information that should be of interest to your readers. As world representative for Hodaka motorcycles, we are eager that the public know the complete history of Hodaka and how it was designed by a group of enthusiastic Americans. Your article is "spot on," except for the following aspect:

Before we created the Hodaka Ace 90, Pacific Basin Trading Company sold Yamaguchi motorcycles. One of Yamaguchi's smaller suppliers was The Hodaka Industrial Company. Hodaka supplied only two engines to Yamaguchi—a 50cc, two-stroke and an 80cc two-stroke. Though they were similar in design, the "80" was not an enlargement of the 50cc motorcycle as stated in your article.

There are many other Yamaguchi models beside the Hodaka-powered "50" and "80," all of which have since passed into oblivion. Yamaguchi was primarily a bicycle fabricator, whereas Hodaka was a machining company and engine manufacturer of gear boxes, etc. for speedway motorcycles and transmissions for other motorcycle manufacturers.

This all may seem like a small point, but we here at Pabatco are so keenly enthusiastic about the quality and craftsmanship from Hodaka, that we are grieved to see it referred to as a Yamaguchi.

Marvin Foster
Pacific Basin Trading Co.
Athena, Oregon

MYSTERY INDIAN REVISITED

You were kind enough to include in your January edition a letter from myself, wherein I sought information and identification of an old Indian motorcycle.

My primary purpose in writing this letter is to say "thank you" for your assistance so far, and through your column here, to convey my appreciation to all the Indian enthusiasts and other interested folks who took the trouble to write.

To all my pen-friends—Thank you. Your action only serves to confirm that motorcycling knows no boundaries.

Peter Sroncott
Rockingham, Australia

Address all correspondence to Cook Neilson, "Letters," Cycle Magazine, 1 Park Avenue, New York, New York 10016. ◉

The Great Fun Machine. Yamaha LS2 100cc Street. A potent little two-cylinder power plant, smooth five-speed transmission. Slips through the esses like a lightweight roadracer.

If you get a little misty at the sight of a precision built, beautifully crafted, highly efficient little machine, you're going to get positively wet-eyed at the sight of Yamaha's new LS2 Street bike.

With a displacement of just 100cc, the LS2 5-port parallel twin engine pours out 10.5 bhp at 8,000 RPM and 6.95 ft. lbs of torque at 7,500 RPM.

And talk about handling, listen to what *Cycle Magazine* says about this one: "... the bike generates confidence ...You can lean the bike to ridiculous angles—unless the suspension is loaded up in a fast, rough corner; then you can only lean the bike to sublime angles...The combination of stability and easy precise cornering makes the Yamaha feel like one of the better-handling lightweight roadracers."

And because the LS2 runs like a roadracer, it stops like one too. Oversized binders front and rear bring you to a fast, fade free standstill. And they're specially sealed against dust and moisture as well.

The transmission shifts smoothly through all five gears. And all the Yamaha details are there, including separate tach and speedometer with the ignition switch mounted between the instruments. And of course Autolube—our automatic gas/oil mixing system.

So, if you think you should be able to travel first class on an economy ticket, test ride the LS2 100cc Street at your Yamaha dealer. The Great Fun Machine—it's what you might call light entertainment.

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MC

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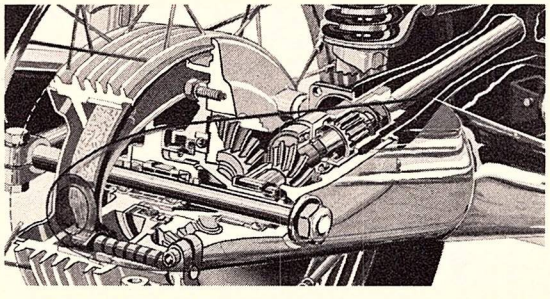
BMW R75/5

The Olympian.

When the Olympic games are held in Munich this summer, a lot of new world champions will be crowned.

The site is appropriate, when you think about it. Because Munich has been turning out champions for years. It's the home of the famed Bavarian Motor Works, builders of the best-engineered motorcycles on earth. In fact, as you can see in the picture, the Olympic grounds are right across the street.

How is a BMW better built? Every way.



Shaft-drive, for instance, rather than a chain. So you're not bothered with constant maintenance and adjustment. Instead, our shaft is the most efficient, trouble-free way there is to deliver power to the rear wheel. It's one-piece, drop-forged steel, and unbelievably strong. No mess, either. It runs clean and silent in its completely sealed oil bath.

Another example? Our unique flat-twin engine layout. It gives you three big advantages:

1. Better balance.

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3. Less vibration, so you can ride longer without getting tired.

And for another, when it comes right down to all-around quality of construction, there isn't a bike to match ours.

But what really makes a BMW the true Olympian of motorcycles is the way it goes. Smooth, quiet, and yet with fantastic responsiveness and maneuverability.

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CIRCLE NO. 25 ON READER SERVICE PAGE

Pipeline

Thoughts on Transistorized Ignition

Britain's Brightest Sparks: For those that understand it, ignition is a necessary evil; for those that don't, it is merely evil. For sure, nobody actually swears by ignition, but many racing men willingly do a great deal of cursing when it goes dead.

Five years ago, Stan Shenton, boss of England's Boyer of Bromley, could trot out a patter of profanities with the best. In those days, B-of-B ran Triumph production motorcycles in "Standard Machine" events, and raced them with success—ignition frailties permitting. In common with other racing Triumphs of that period, the Boyer bikes contracted the diminishing-power malady, especially during the latter stages of long distance races. Stenton easily recognized the symptoms and identified the carrier. It was the crude "make and break," with its in-built capacity for wear and tear, which gradually retarded the spark as the miles rolled by. Soon, the conventional set-up became Shenton's pet hate. The contraption was clumsy and inaccurate, it was appalling in concept and iron-age in engineering; so many things, that it temporarily defied the Shenton descriptive powers. But an associate filled in. In this fashion: "There are these two pieces of metal, y'know, and they are indirectly bashed apart by another off-center bit of metal, y'know. Then there's this spring which slams them shut again." That the fire was hopefully arranged relatively to engine rotation by a mass of whirling weights and springs, was added reason for the Boyer crew wanting to rid themselves of the hated system.

So Shenton almost naturally turned his thoughts to transistorized ignition, and he took his worry along to Ernie Bransden, a young lecturer in electronics. Bransden agreed to cooperate, and pretty swiftly he had a printed-circuit/transistor/capacitor/diode/condensor scheme on paper. That was no problem; arranging the components into a lightweight, compact and rugged motorcycle ignition unit was something else. Fortunately, Bransden proved a bit of a motorcycle fiend himself and, along with Shenton, drew up a demanding specification for the Boyer-Bransden ignition. The system would be supplied in simplified bolt-on-kits, requiring no machining and no special tooling aids for assembly. The transistor amplifier pack had to be proofed against vibration, water, oil and shocks. Additionally, generated heat should be minimal, allowing virtually unlimited choice of location for the "black box." So the Boyer-Bransden Ignition was born.

Two years later, the system had undergone sufficient research, development and testing for small-batch production to begin. By then, Shenton had two main worries. One, the market would be flooded with transistor ignitions. Secondly, maybe the Great Motorcycling Public was unprepared for fit-and-forget DIY ignition—meaning the B-B equipment would be blamed for external troubles and customer ignorance. The market wasn't saturated (it was hardly touched), but Shenton was right on point number two. Almost the first complaint from your average motorcyclist came from a fellow who'd parted with many Pounds Sterling for someone's super goodies-filled special; great in every respect apart from Boyer's lousy misfiring ignition. (That complaint nearly gets Shenton going. He insists electronic ignition can't misfire—it's either all go or total stop.) As it turned out, a trashy ignition switch was at fault. One week later, another owner of the same brand of special arrived with an identical moan (and identical fault). Experience has since demonstrated that most times the Boyer equipment is blameless.

Even Doug Hele's personal-transport Trident gave a condition of intermittent ignition failure when Boyer equipped. So back in went the Joseph L ignition, which functioned. Indeed it did, until dying stone cold late one night, leaving the subsequent inquest to uncover a broken wire in the cable harness. Obviously, before complete breakdown, the poor electrical contact was acceptable to create ignition through the standard equipment. But, in the Boyer box instance, the erratic contact sent signals to the amplifier and caused the apparent misfire and grief.

As more Boyer units filtered into private hands *via* mail ordering, the need for customer-proof modifications became evident. One simple addition now places the 12-volt legend prominently on the epoxy moulding, since people will keep trying to run their non-generator racers on 6-volt batteries. These odd interpretations of the fitting instructions arise because two six-volt coils (wired in series, of course) are specified for twin-cylinder machines. The system *will* fire-up on a fully charged 6-volt battery, leaving the owner enjoying a great five minutes or so before the deathly hush. Luckily, this causes no damage, but does tend to wear the Shenton patience.

More serious have been the misguided efforts by the semi-technical to put one over on Bransden's expertise, usually by fitting different voltage coils to obtain a better spark. Such experiment invariably ended disastrously, and was directly responsible for a safety diode being introduced into the circuit. Now when the system is over-abused, the diode blows and saves the remaining encapsulated components. The diode can then be replaced—but only in the Boyer service department.

The safety factor was increased umpteen times by incorporating a modification to permit HT current to pass along the generator pulse lead. The need to cover such an improbable contingency emerged from one perfectly installed system, wired by no lesser personage than Paul Dunstall. When carrying out the timing procedure, Dunstall inadvertently completed a circuit through himself, the plug terminal and the printed-circuit stator plate, and transmitted a HT message to the amplifier—with obviously detrimental results.

Shenton believes they now have every eventuality covered, and each kit comes with a one-year guarantee. Once fitted, the Boyer ignition should require no further attention. "The only trouble," says Shenton, "people get so carried away with the infallibility, they ignore the electrics completely until it's too late."

Shenton guarantees that every single electronic mini-item is tested before assembly and the complete amplifier is test run before final packaging. Even so, a small percentage of duds slip through, and Shenton is unhappy about that. Worse, if one or other of the handful of electronic components goes phut, it's likely to happen early in its operating life.

Because the benefits of Boyer's ignition were especially noticeable on the race tracks, Shenton had it homologated for Production Machine racing and listed as options by BSA, Triumph and Norton Villiers. In 1971, the Peter Williams works Nortons were sparked by Boyer in such important races as the Thruxton 500-miler and the Production TT. Unfortunately, the Isle of Man partnership was strained a little when the magnets on the Boyer rotor worked loose and the whole thing eventually disintegrated. It won't happen again. Nowadays, the full circle rotor has milled locating slots, each magnet is secured by a screw *and* permanently fixed with an epoxy adhesive.

Electronic ignition is undoubtedly a desirable refinement, the actual degree of desirability depending on the type and make of motorcycle. On the production racer Norton Commando it becomes virtually an

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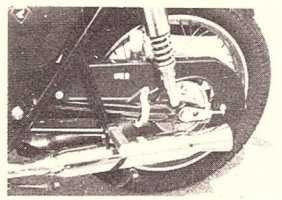

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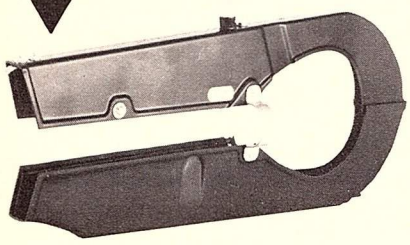

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essential, considering the hell of a battering the normal contact breaker gets from chain snatch. The inherent weakness was illuminated in no uncertain fashion during strobe light comparison tests. At 6,700 rpm, the position of the sparks varied up to 8 degrees with production equipment in place. When the Boyer ignition was substituted, the spark was held with outstanding accuracy at peak rpm. Stabilizing the spark gave an immediate 2.5 bhp bonus on the dyno. Initially, the increase was restricted to high rpm, but altering the basic timing produced a constant improvement throughout the range. In fact, effective power came in at a lower figure.

The 1972 Boyer production target is 800 units, expanding the range of kits which is already claimed as the largest in the world. At present, bolt-on kits are specified for BSA, Triumph and Norton twins, BSA-Triumph triples, Honda fours, Yamaha racers, and 250/500 street and 500 racing Suzukis. The Norvil-built Commando racers earmarked for the USA are fitted with Boyer ignition; in England the majority of racing teams running British Superbikes are Boyer converts. On the Continent, the complex URS "four" (World Champion winning sidecar 1971) has relied on the British equipment, from the Helmut Fath days through to Munch. Up to date, the latest Bromley feasibility study on overseas machinery concerns Harley-Davidson.

So far, production schedules have been geared to a sales policy of "if you want it, come and get it—cash down, no credit." Nothing attempted in the promotional line can be described as wild, advertising is definitely low-key.

Looking to the future, the Shenton-Bransden partnership is developing other electronic aids to efficiency. One exercise in mini-ignition squeezes the entire electronic essentials into the space beneath a Trident's contact breaker cover, but the device unlikely to reach production. In a far more advanced stage is a novel solid-state electronic tachometer, designed to cater for the spark-every-360-degrees Boyer ignition.

In the process, Shenton has shifted the Boyer of Bromley activities away from pure motorcycle selling towards the manufacture and marketing of high performance equipment. Shenton also offers a classy tuning service for Triumph owners, and supports British 750cc racing with two Trident-powered specials.

Three for Andrews: Master of modern balance, Ossa ace Mick Andrews won his third-in-a-row Scottish Six Days Trial and equalled the 1947-48-49 record of AJS old-stager Hugh Viney (in the days when AJS made beautiful four-stroke bangers). It was Viney who, as Plumstead (AJS-Matchless) competitions manager in 1961, gave Andrews his first real works ride—on AJS naturally.

Although starting his 1972 ride indifferently and failing to hit the front until day

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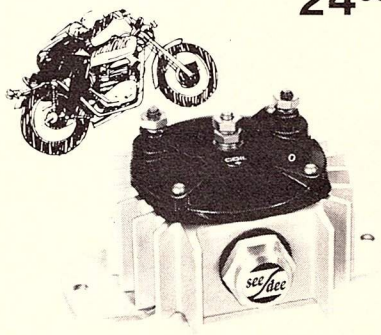

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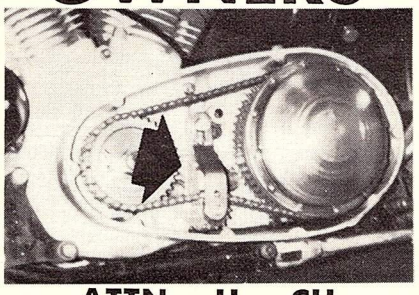
SPORTSTER OWNERS



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four, Andrews displayed remarkable calm and consistency to finish with the only score below fifty. When the crunch came, sheer professionalism carried the day. Faced with a tight Thursday time schedule, he took the trouble to do his mathematics and zoomed through without time loss. In contrast, Wednesday night's front runners, Malcolm Rathmell and Geoff Chandler on Bultacos and Rob Edwards (250 Montesa), took things leisurely and paid the penalty. In the end, persistent Alan Lampkin (250 Bultaco) came through to take second spot from Edwards.

With Andrews putting the clamp on individual honors for the third time, a Montesa trio made merry with the manufacturer-award winning habit—actually it was four on the trot for Montesa.

Lone American invader, Bultaco mounted Mike McCabe had a great time, lost 381 marks and threatened to return in 1973. By far and away the best overseas challenger was Sweden's Thore Everston. The OSSA-riding Scandinavian finished 13th. with 104 marks lost. At halfway stage, Everston thrust right among the locals into seventh place, until nervous tension got the upper hand. Two capacity class awards went foreign; the 350cc to Ferdinand Munoz of Spain while Austrian Walter Luff (Puch) headed the 200cc field.

KTM Emerges: The Austrian KTM, well known as American Penton, made its 250cc motocross mark in the hands of Russian Vladimir Kavinov. In a Dutch international meet, Kavinov took the KTM to an impressive overall victory by winning both legs. Later that week, in the Dutch GP, he finished a first-leg third behind Joel Robert and Sylvain Geboers. Then when going equally well second time out, the KTM halted with gearbox problems.

Read On MV: Phil Read, signed by MV-Agusta as back-up rider to Giacomo Agostini, had his first outing on the 350-3 during the Italian GP at Imola. The 250 World Champion finished three places down on record-shattering winner Ago, who was on the new four-cylinder flyer.

Read's 350 involvement with MV for the classics (and possible 500 rides to come) neatly avoids cutting across his John Player-Norton 750cc commitments. And he will also be free to race his own 250cc Yamaha.

H-D Slams 'Em: Spectacular Renzo Pasolini, riding HD-Aermacchi two-strokes, twice shattered the Yamaha myth at Imola. 'Ol-knees-'an-elbows battled through the Yamaha ranks to make it a second-spot for HD-AM in the 350—closing on Ago, too. But Paso really gave them the race around in the records-all-the-way 250cc race. He passed Yamaha's Gould and company, not once, but twice, having dropped the model at just over half-distance. ◉

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AN EXPERT ANSWERS YOUR QUESTIONS ABOUT MUSCLES

Our files show that thousands of readers like yourself want to build bulging muscles and achieve real physical power like their favorite athletic champions. How to go about it? We decided to ask an expert, Dave Prowse, 3-times British Weightlifting champion and leading fitness expert. Here are his answers.

Q. *What does it take to build muscles?*

A. Basically, it takes exercise. Almost any exercise will help to develop at least some of your muscles if you keep at it long enough and hard enough.

Q. *Isn't there an easier way?*

A. Yes. There is one outstandingly effective training method that is also fast and easy—the one I use and recommend—the new Bullworker system.

Q. *What's that?*

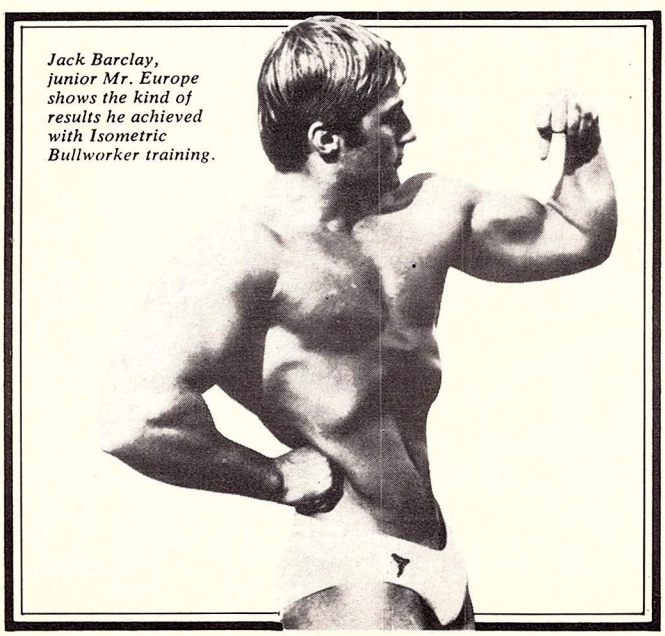
A. The Bullworker is a revolutionary new muscle-building exerciser based on Isometrics, the science that increases strength up to four times faster than conventional methods. In my opinion, it's the most advanced training system in the world today. Many leading athletes use it: World-famous Heavyweight Boxer Muhammad Ali, World Heavyweight Judo Champion Wim Ruska, and Cycling Champion Eddy Merckx, to name only a few.

Q. *How long does Bullworker training take?*

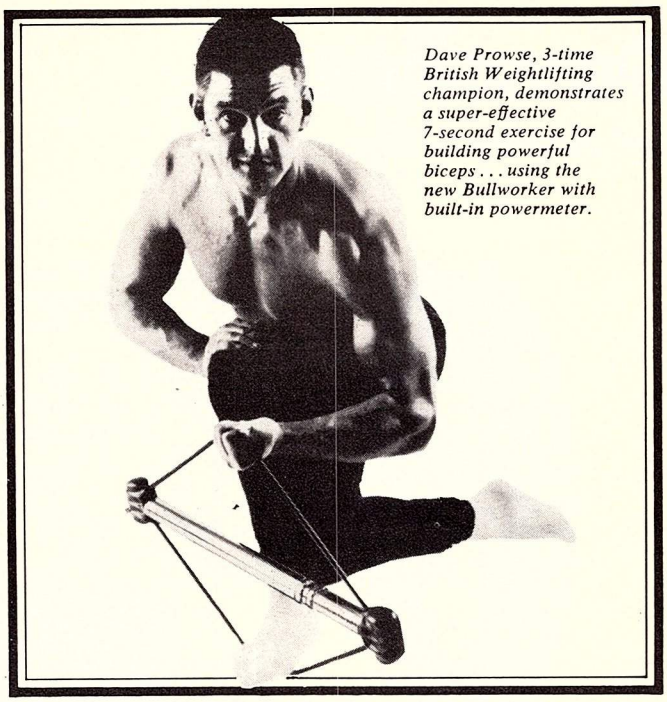
A. Bullworker provides absolutely the fastest kind of exercise possible. In fact, an introduction training program takes only 70 seconds a day. No other system—weightlifting, pulleys, or strenuous calisthenics—can give you results so quickly and easily. On the contrary, many old-fashioned methods take hours of sweaty, boring work each day... and it's often months before you begin to see improvements. Busy professional athletes and champions don't have time for that. Nobody does.

Q. *How long does it take before you begin getting results?*

A. With the Bullworker, you can actually begin to see and measure the positive results right from the very first day! Thanks to a built-in measuring device called the Powermeter. After every exercise you just check the reading to see exactly how much your strength has increased from the day before. There's no guesswork involved. Isometric Bullworker training can increase your power at the amazing rate of up to 4% per week! That means a 50% increase in strength in the first three months alone. And I've known many young men who have gone on to double and even triple their strength.



Jack Barclay, junior Mr. Europe shows the kind of results he achieved with Isometric Bullworker training.

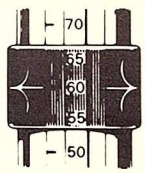


Dave Prowse, 3-time British Weightlifting champion, demonstrates a super-effective 7-second exercise for building powerful biceps... using the new Bullworker with built-in powermeter.

Q. *What do those figures mean in visual terms?*

A. They mean that in as little as 14 days you can actually begin to *see* muscle growth in a mirror and *verify* it with a tape measure. Every week thereafter brings ever faster growth.

Built-in Powermeter
You can actually measure your musclepower g-r-o-w-i-n-g from the very first day.



Q. *But to get such impressive results, don't you have to work very hard?*

A. Absolutely not. That's the outstanding advantage of Isometric training... it's so amazingly easy! Each "Static-power" Isometric exercise takes *only 7 seconds,* and you barely have to move. It's not even necessary to disrobe. The Bullworker is so light and compact, it can be used at home, in the office, anywhere... even while watching TV! It's a great improvement over bulky, expensive weights, bicycle machines, pulleys, etc.

Q. *Can Bullworker training even develop bodies which are weak and skinny, or fat and flabby?*

A. Definitely! It's been proven by thousands of men of every shape, size and age all over the world. Bullworker training helps transform weak, thin arms into rippling, muscular pillars of strength, build broad, powerful shoulders, turn flat, shallow chests into deep, manly ones, forge loose stomach flab into steel-hard, well-defined muscle... build that "V" shape of a real athlete, develop sturdy, contoured thighs and calves.... And all this in *record time!*

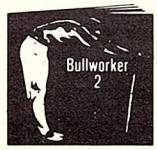
What's more, I've known skinny, shy fellows who, after just a few short weeks with Bullworker, turned into real go-getters... every inch a man... bowling girls over with their dynamism, confidence, and new found power! You really have to see the remarkable effects of Bullworker for yourself to believe them!

Q. *How can our readers find out more about the Bullworker, perhaps actually try it for themselves?*

A. I understand that the Bullworker distributor in the USA is now making it available—free—on a two week home-trial basis in order to introduce it to the general public. If your readers are interested in developing their bodies, in building muscles and strength faster than ever before possible, I suggest that they contact the US distributor for full details.

© BULLWORKER SERVICE,
201 Lincoln Blvd., Middlesex, New Jersey 08846 144

FREE BOOKLET



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newsline

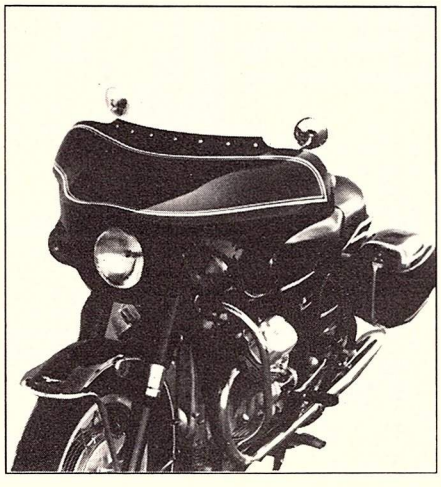
Keeping Your Bike In Shape

Off-The-Road: Goodyear offers a new tire called the Eagle MX tire. The tire was introduced in the Spring of '72 and has become popular with motocross competitors and off-road enthusiasts alike.

The tread blocks on the Eagle tire are surrounded by wide spaces in order to sling away the mud. The fat treads are tapered and buttressed up the sidewalls to maintain a strong toe hold while trying to corner.

The Eagle MX tire is now in production in 4.00 and 4.50 x 18 for rear wheel use.

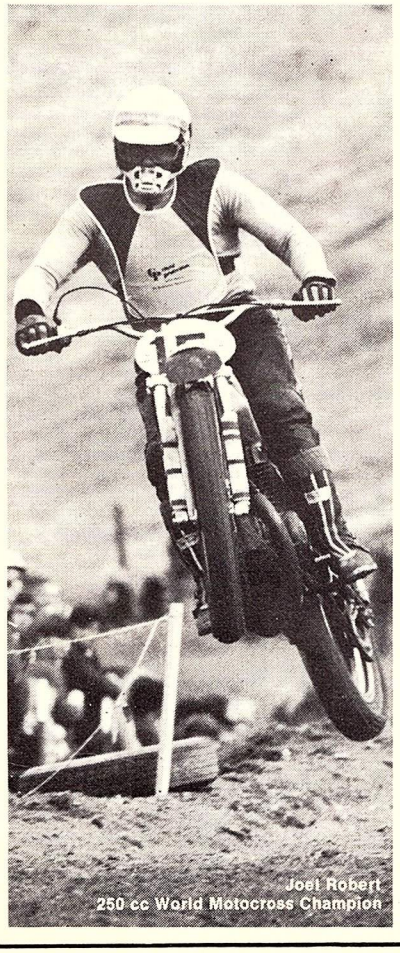
CIRCLE NO. 1 ON READER SERVICE PAGE



Guzzi Fans: A new fairing has been designed exclusively for the Moto Guzzi. Features provisions for Class A turn signals (legal in all states) with turn signal lights available at reduced cost when ordered with the fairing. Is available in black or white with custom hand brushed pinstriping optional. Windshields available in varying lengths. For more information contact: Wixom Brothers, Inc., 1637 East Burnett, Long Beach, California 90806.

CIRCLE NO. 2 ON READER SERVICE PAGE

Fork Seals: The Gorman Pressure-Balanced Seals were originally designed for use in larger hydraulic systems but were recently adapted for use in motorcycles by Universal Accessories of Dallas, Texas. The design incorporates a method of preventing seal leakage which employs the use of phenolic spacers. The spacers continue to float while the seal itself finds its own seat. The seals are currently available for Ceriani (motocross and roadrace), AJS, Betor, Montesa, R.E.H., Metal Profile, Telesco and CZ front forks. Sealers come



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The business of being a motorcycle competitor demands the best head protection money can buy. That's why more professional competitors **choose** Bell Helmets than all other makes combined. Should you settle for less than the best for your motorcycling pleasure. See your Bell Helmet Dealer.

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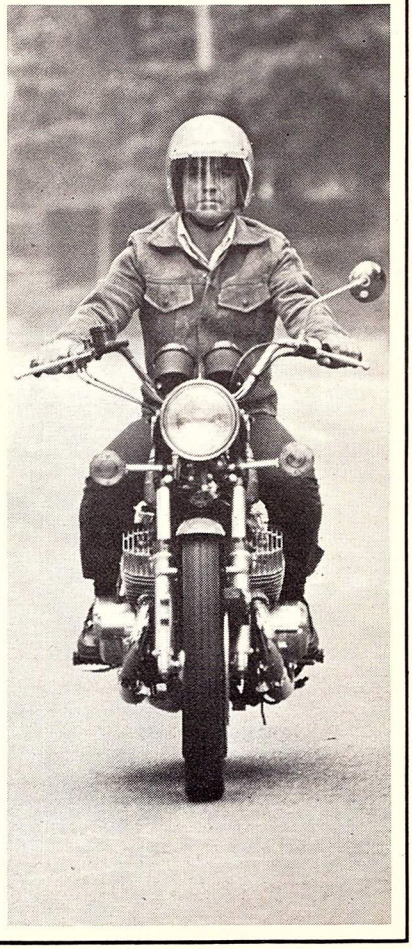
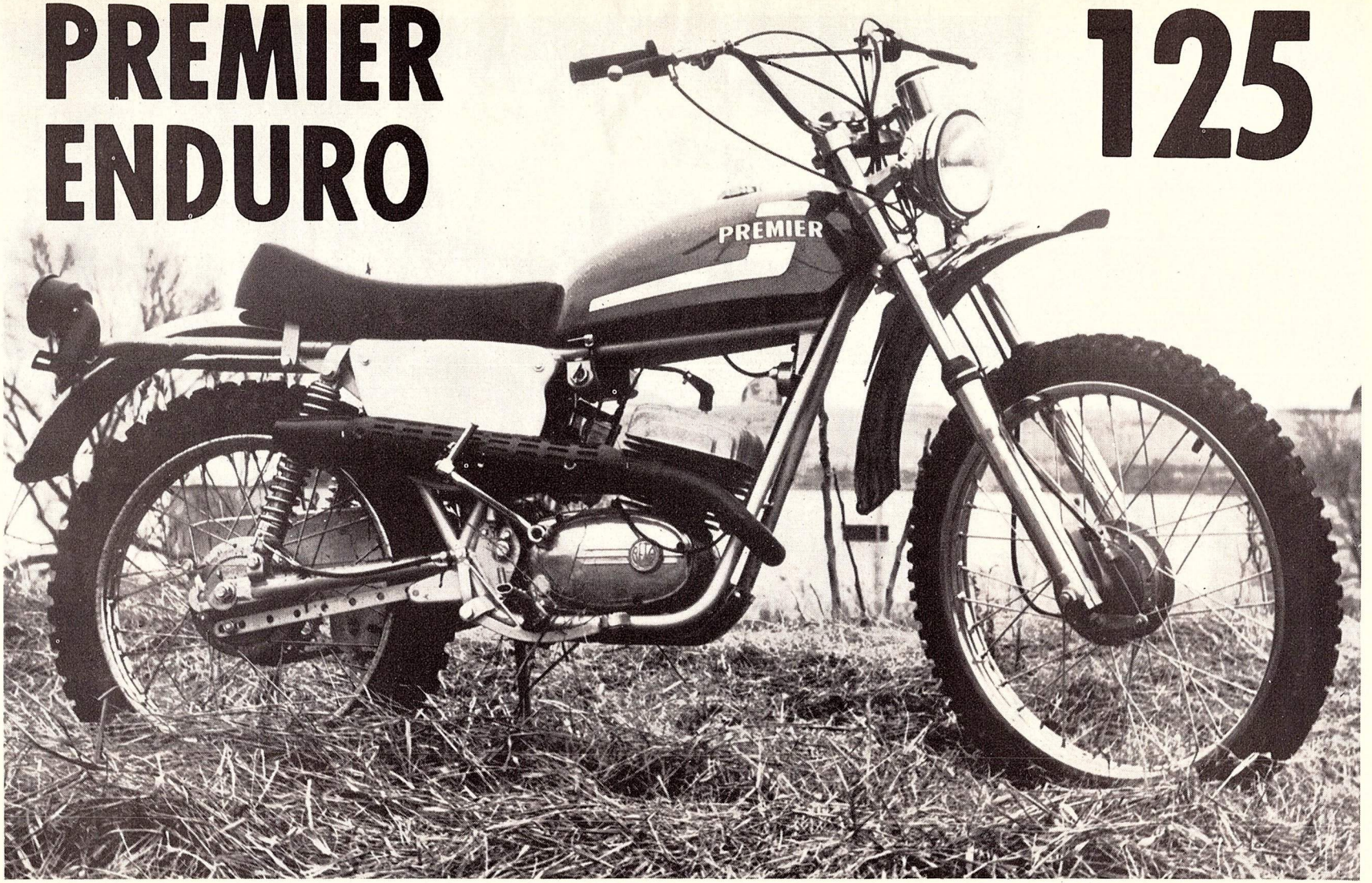


CIRCLE NO. 39 ON READER SERVICE PAGE

PREMIER ENDURO 125



The all new 125 Enduro from Premier. Power-packed lightweight, on-the-mark handling for capturing trophies or just rambling along your favorite trail. The 125 Enduro offers quick response and exciting performance compared with some of the best machines in its class at a suggested retail price lower than you think.

Check these features found on the most expensive machines and hurry to your local Premier dealer for a test ride today.

- Five-speed, constant mesh transmission.
- Timkin taper bearings.
- 21″ front wheel.
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- And much, much more.

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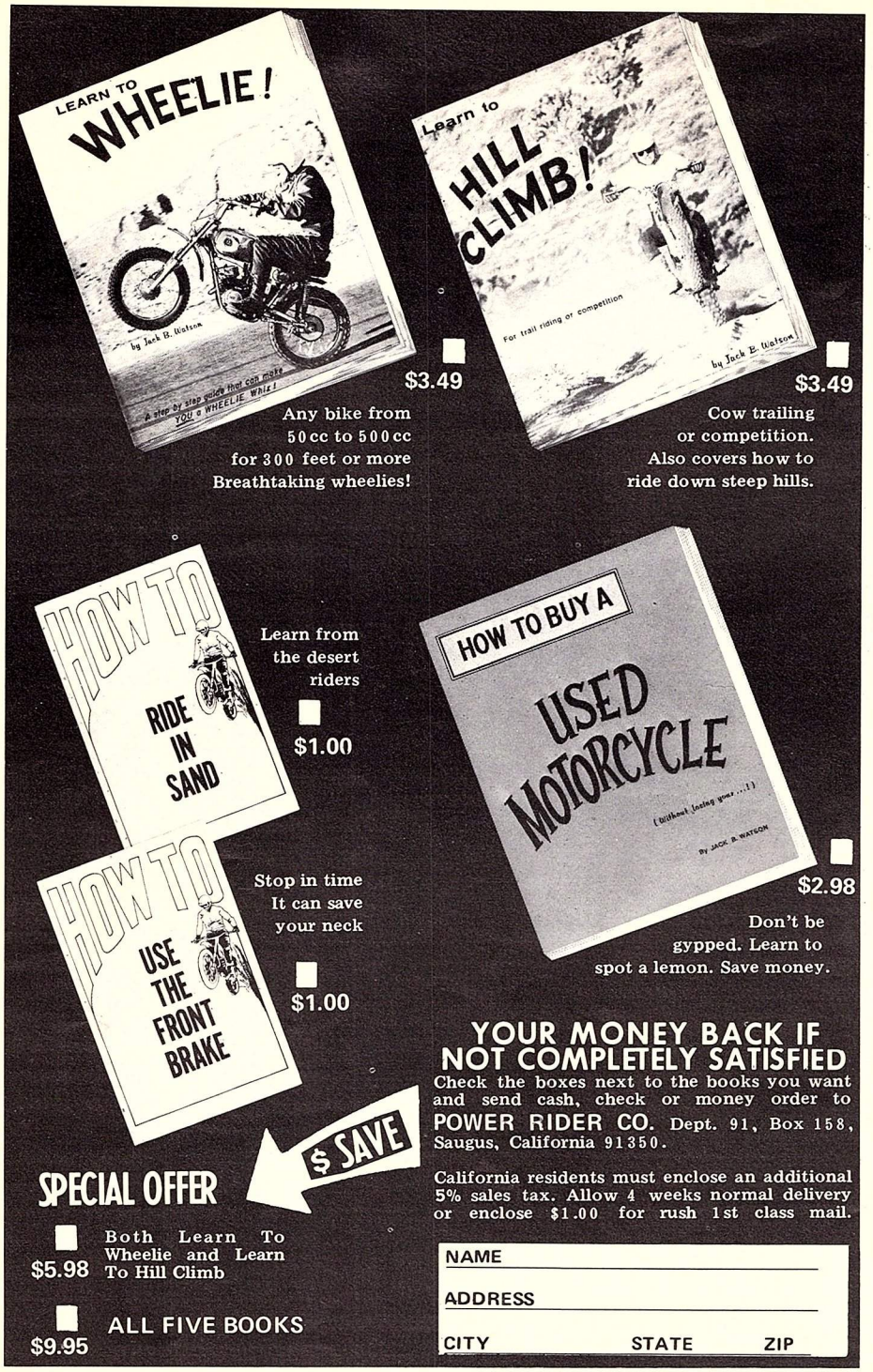
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packaged with complete illustrated installation instructions, a tube of special lubricant and a warranty certificate. There are also replacement seals for Husky, Yamaha, Honda, Suzuki, Kawasaki. Others will be available soon.

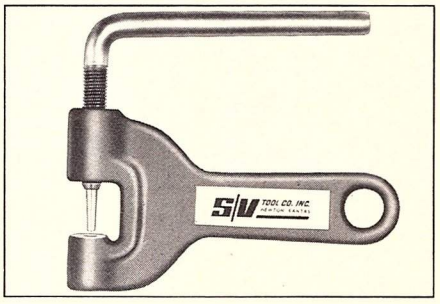
Price at $14.75 per set (C.O.D. plus shipping). The sealers come with a one year guarantee. For further information write to the manufacturer: International Cycle House, 1267 North Wilton Place, Los Angeles, California 90038.

CIRCLE NO. 3 ON READER SERVICE PAGE

Tank Sealant: From Pro-Tech Products Company is the Fuel Tank Sealant used to wall up pin-hole leaks in metal and fiberglass motorcycle fuel tanks. The sealant is useful to seal existing leaks instead of welding, or is good to use as a preventive maintenance to help safeguard against rapid loss of fuel due to split seams. According to the manufacturer, custom paint and other exteriors are not endangered by use.

Order from your motorcycle dealer, or straight from the manufacturer: Pro-Tech Products Co., 8846 Alondra Blvd., Bellflower, California 90706.

CIRCLE NO. 4 ON READER SERVICE PAGE



Chain-A-Part: A new Chain-A-Part tool for #40 and smaller roller chain has been announced by S/V Tool Company, Inc. Chain is positioned in tool, and a few turns of the built-in handle will remove the connecting pin. The tool features a ball bearing swivel between punch and handle for easy operation of a rugged ductile iron body. It's very useful on motorcycles, mini-bikes, bicycles and any equipment using #40 or smaller roller chains.

For more information write S/V Tool Company, Inc., Suite 222, 208 West Sixth, Newton, Kansas 67114.

CIRCLE NO. 5 ON READER SERVICE PAGE

CIRCLE NO. 43 ON READER SERVICE PAGE →

A quarter of a million bikes ago, the basic Bonneville engine started winning races.

It still is.

When our first famous vertical twin began winning, Gene Romero hadn't even been born. Yet last year Gene wore the AMA's Number 1 plate because that same basic engine—Triumph's dual-carb, 4-stroke OHV Bonneville—helped him thunder to his Grand National Championship.

To hang so tough for so long, an engine just has to be better-designed and better-built. It even looks the way a great engine should.

And it's pulling a great bike. Bonneville offers a choice of four- or five-speed gear box, for greater flexibility. It has a special Through-The-Frame Oil System that obsoletes the oil tank. And a beefed-up pump that flows oil faster to cool cooler.

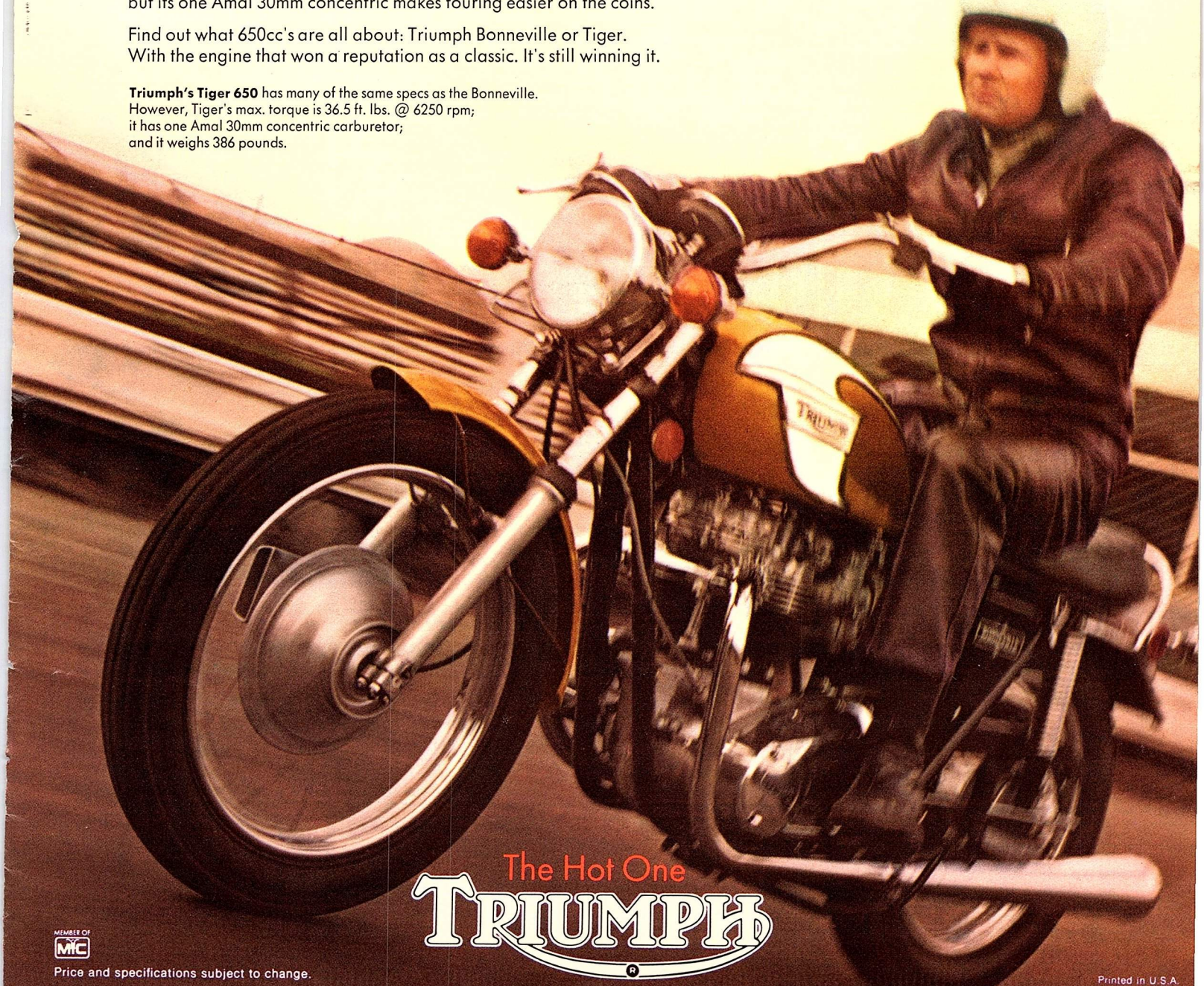
It has aluminum alloy forks—stronger yet lightweight, and they damp 6¾" both ways. Conical alloy hubs brake surer and cooler while they cut unsprung weight. And the double-loop frame is hand-welded for double strength.

There's plenty more. But maybe you want a big bike with the simplicity of a single carb. Then straddle a Triumph Tiger 650. It has the super specs of the Bonneville, but its one Amal 30mm concentric makes touring easier on the coins.

Find out what 650cc's are all about: Triumph Bonneville or Tiger. With the engine that won a reputation as a classic. It's still winning it.

Triumph's Tiger 650 has many of the same specs as the Bonneville. However, Tiger's max. torque is 36.5 ft. lbs. @ 6250 rpm; it has one Amal 30mm concentric carburetor; and it weighs 386 pounds.

ENGINE TYPE OHV–4 stroke
CYLINDERS 2
MAX. TORQUE 38.5 ft. lbs. @ 6000 rpm
BORE/STROKE 71 x 82mm
COMP. RATIO 9:1
TRANSMISSION 4-Speed gearbox
5-Speed gearbox
CARBURETOR 2-Amal 30mm conc.
FRONT TIRE Dunlop 3.25 x 19" K70
REAR TIRE Dunlop 4.00 x 18" K70
FRONT BRAKE 8" DLS
REAR BRAKE 7" SLS
WHEEL BASE 56"
GND. CLEAR. 7"
DRY WEIGHT 387 lbs.
FUEL TANK 2½ & 3½ gals.
OIL 6 pts.



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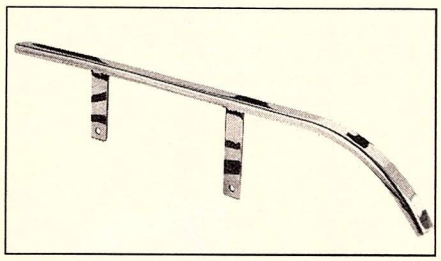
Motorcycle Mechanics School: American Motorcycle Mechanics School is now in its third year of motorcycle mechanics instruction. The School presently offers day and evening classes for both basic and advanced instruction and is presently forming a special Shop Management Course.

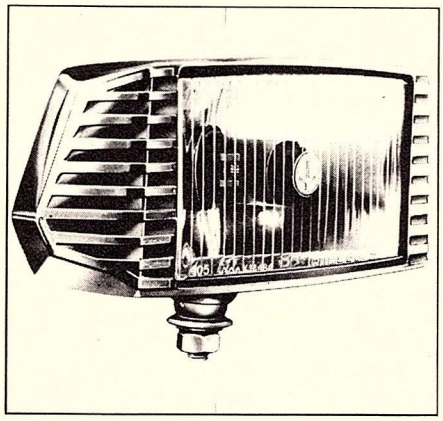
The American Motorcycle Mechanics School coordinates a nation-wide placement for graduates. For further information write to: American Motorcycle Mechanics School, 2840 North Halsted Street, Chicago, Illinois 60657. Telephone: 312/929-0071.

CIRCLE NO. 6 READERS SERVICE PAGE



Honda Chainguard: Racecrafters has introduced a new bolt-on chainguard for Honda Fours. The "Slimline" (as it is called), is a chainguard made of aircraft aluminum and is shaped to cover the chain adequately. It is polished to a chromelike luster and is designed so it can be bolted into place immediately. The price is $12.95. Order by mail from: Racecrafters International, Box 347, Los Angeles, California 90028.

CIRCLE NO. 7 ON READER SERVICE PAGE



Night Light: From Beck/Arnley Corporation comes the "Carello" Iodine Quartz, driving lamp for custom machines. This unit provides an effective narrow cone of concentrated white light (225,000 candle power) for safe road visibility. The use of a double-focus reflector and special internal/external optical design pattern help to make things safe for high speed night riding.

Price is $34.95. Order directly from local Beck/Arnley dealer in the U.S. or Canada.

CIRCLE NO. 8 ON READER SERVICE PAGE

Head Wrenches: A new line of S-K hex head wrenches has been introduced by the Hand Tool Division of Dresser Industries, Inc. The set includes eighteen different tools in popular sizes, precision-made for accurate fit. Come in both short and long pattern for maximum utility. Packaged in a vinyl pouch grommeted for hanging.

For complete information write: Hand Tool Division of Dresser Industries, Inc., 3201 North Wolf Road, Franklin Park, Illinois 60131.

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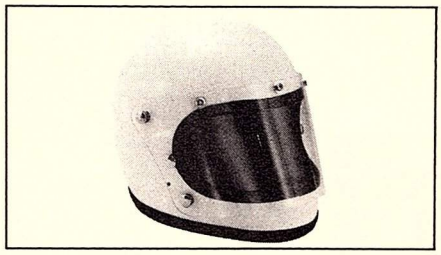
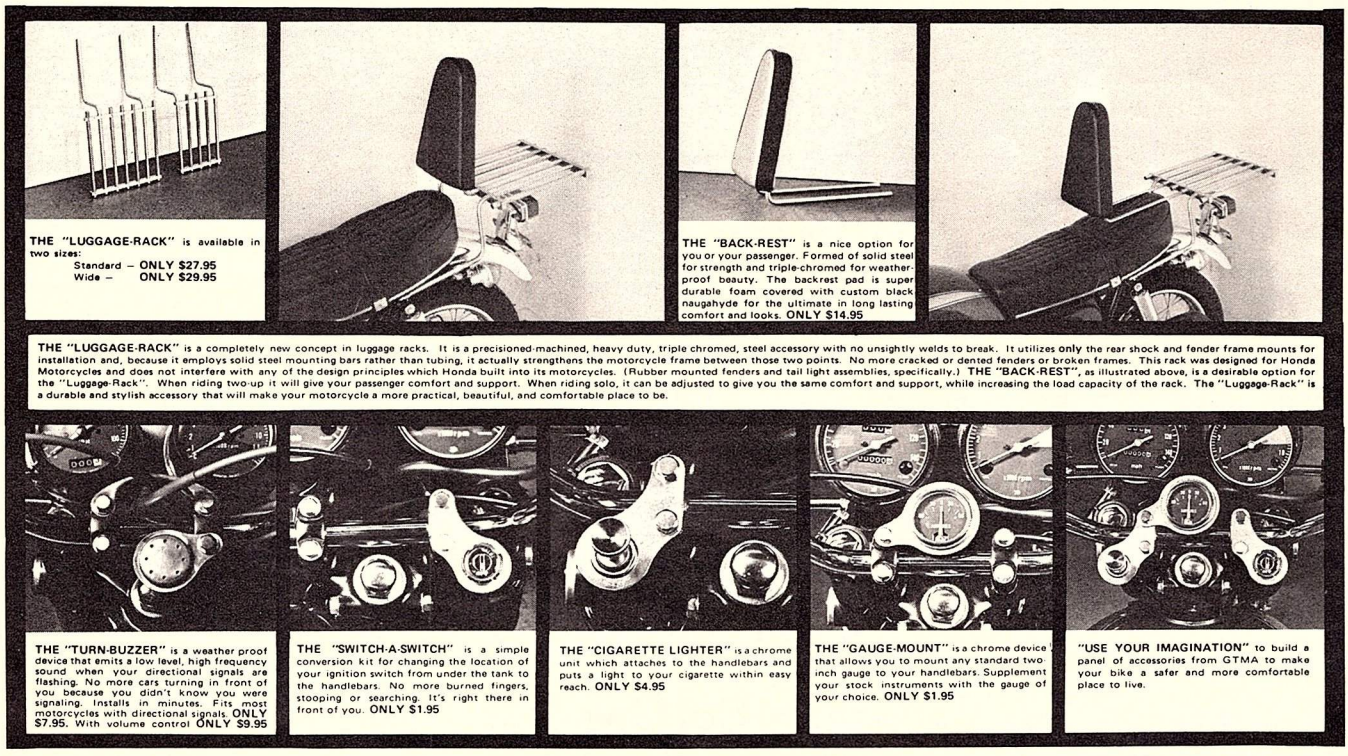


Full Coverage: Paulson full coverage face shield is designed for the bucket style total coverage helmets. The face shield features dual snaps so that a separate visor can be used with tear-away acetate sheets for competition riding.

Available at motorcycle dealers. Or order direct from: Paulson Manufacturing Corporation, 46752 Rainbow Cyn. Road, Fallbrook, California 92028.

CIRCLE NO. 10 ON READER SERVICE PAGE

ATTENTION HONDA OWNERS


THE "LUGGAGE-RACK" is available in two sizes:
Standard – ONLY $27.95
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THE "BACK-REST" is a nice option for you or your passenger. Formed of solid steel for strength and triple-chromed for weather-proof beauty. The backrest pad is super durable foam covered with custom black naugahyde for the ultimate in long lasting comfort and looks. ONLY $14.95
THE "LUGGAGE-RACK" is a completely new concept in luggage racks. It is a precisioned-machined, heavy duty, triple chromed, steel accessory with no unsightly welds to break. It utilizes only the rear shock and fender frame mounts for installation and, because it employs solid steel mounting bars rather than tubing, it actually strengthens the motorcycle frame between those two points. No more cracked or dented fenders or broken frames. This rack was designed for Honda Motorcycles and does not interfere with any of the design principles which Honda built into its motorcycles. (Rubber mounted fenders and tail light assemblies, specifically.) THE "BACK-REST", as illustrated above, is a desirable option for the "Luggage-Rack". When riding two-up it will give your passenger comfort and support. When riding solo, it can be adjusted to give you the same comfort and support, while increasing the load capacity of the rack. The "Luggage-Rack" is a durable and stylish accessory that will make your motorcycle a more practical, beautiful, and comfortable place to be.
THE "TURN-BUZZER" is a weather proof device that emits a low level, high frequency sound when your directional signals are flashing. No more cars turning in front of you because you didn't know you were signaling. Installs in minutes. Fits most motorcycles with directional signals. ONLY $7.95. With volume control ONLY $9.95
THE "SWITCH-A-SWITCH" is a simple conversion kit for changing the location of your ignition switch from under the tank to the handlebars. No more burned fingers, stooping or searching. It's right there in front of you. ONLY $1.95
THE "CIGARETTE LIGHTER" is a chrome unit which attaches to the handlebars and puts a light to your cigarette within easy reach. ONLY $4.95
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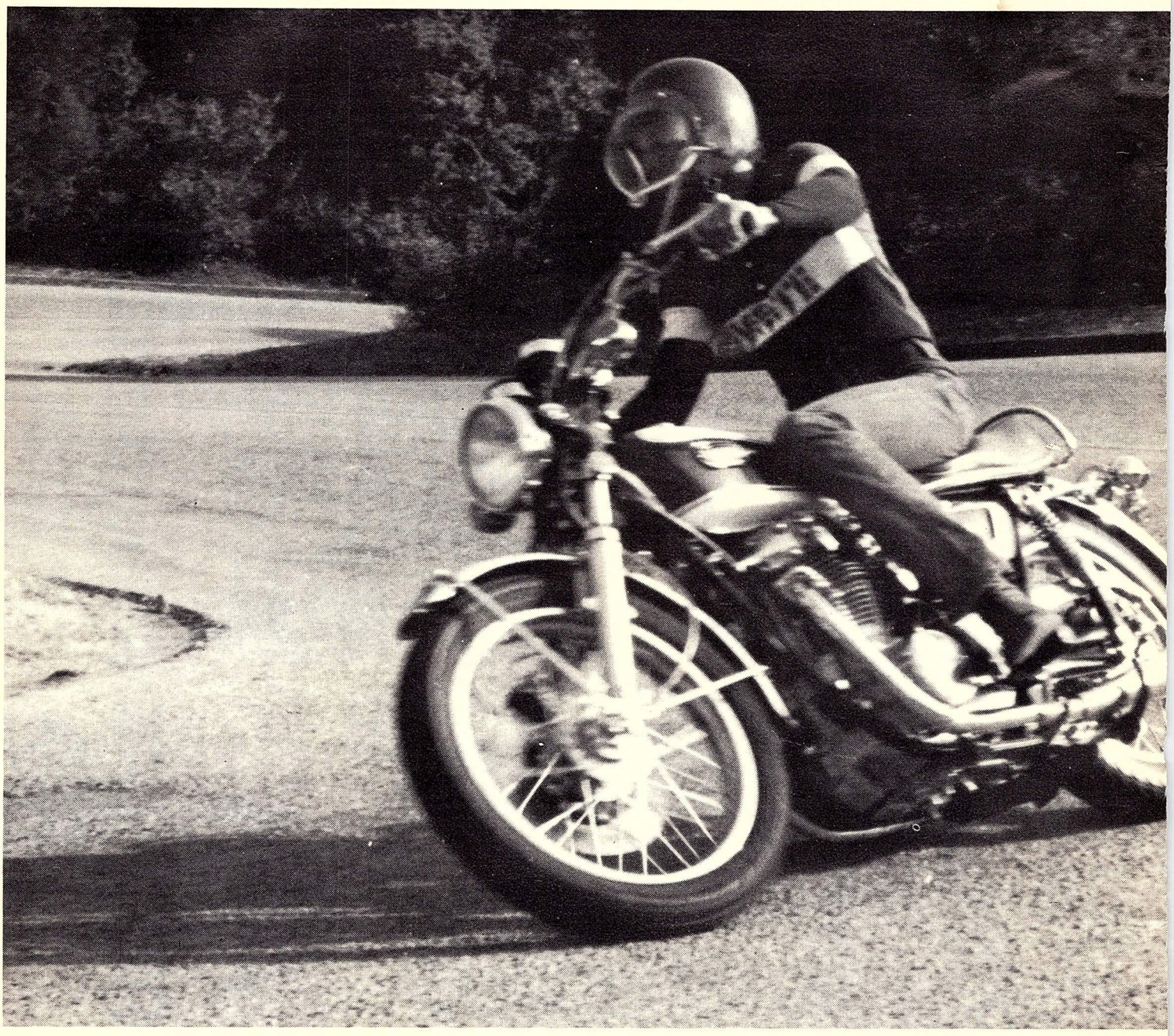
World's fastest...Sportster-powered streamliner set an absolute world speed record at Bonneville October 16, 1970...265.492 mph. That's Outperformance!

CIRCLE NO. 26 ON READER SERVICE PAGE



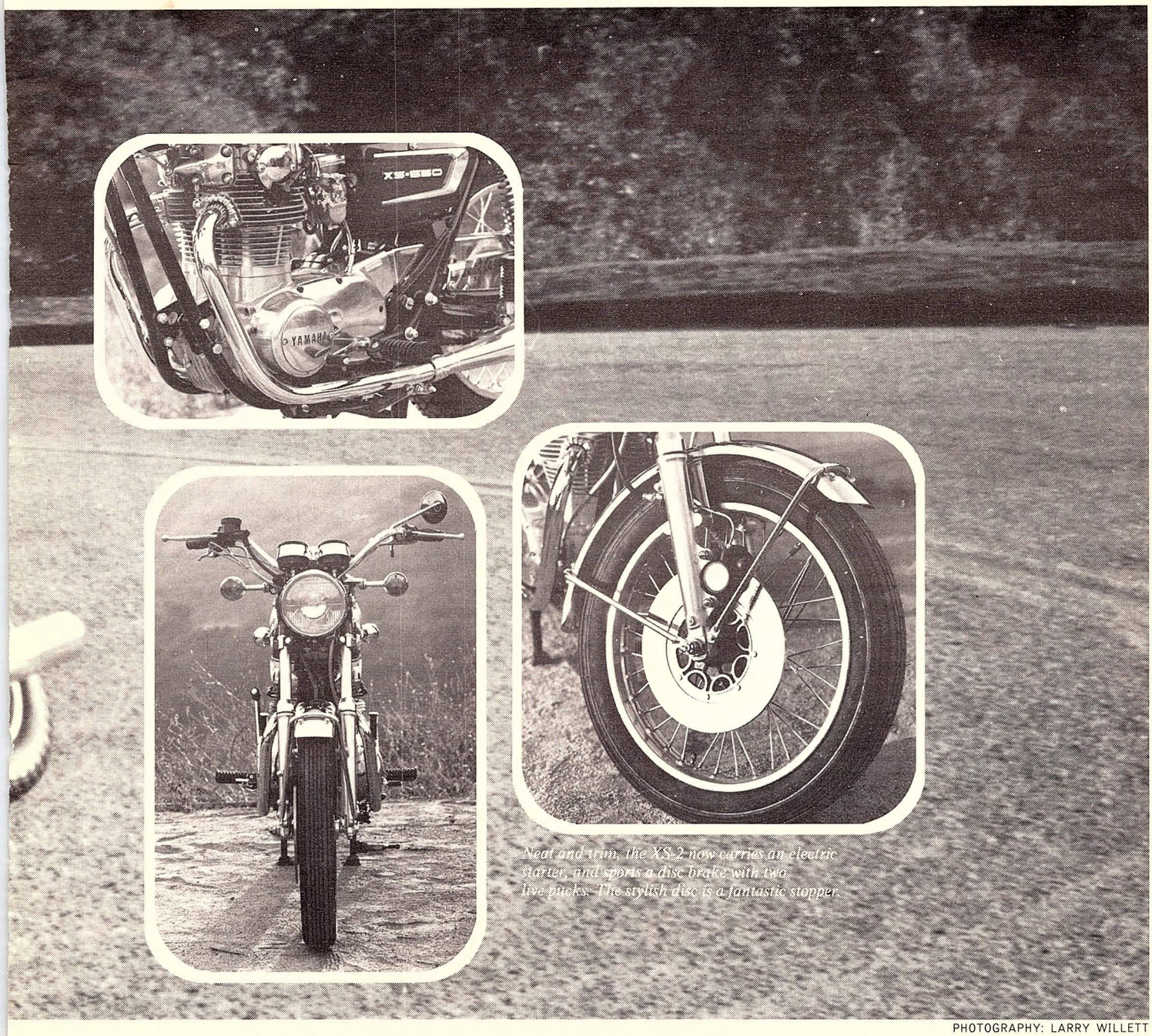
CYCLE ROAD TEST:

650 Yamaha XS-2

The Yamaha 650 stands at the end of a long line of 40-inch vertical twins. The bike is a shaker, but it's also a great bargain.

• It is entirely possible that the 1972 Yamaha XS-2 signals the end of the logical development of the 650cc vertical-twin concept, a concept invented and nurtured by the British, copied and developed by Benelli, copied and discarded (as far as the American market goes) by Kawasaki, and copied, fiddled and shaped by Yamaha. The end of logical development—except for one consideration would serve to disguise the ultimately brutish idea of two large pistons lumbering up and down, side by side, together. The consideration, is a shock-absorbing mounting system for the engine. Of all the vertical parallel twins available today, only Norton uses an engine mounting system that isolates the rider from engine vibration. Of all the big vertical twins, only Norton makes it as a long-distance bike.

Five years ago it would have been a lot easier. Five years ago nobody knew too much about the Moto Guzzi, or the Honda 750, or the BMW R75/5; and sore hands, sore feet, and a sore blunt end were the lot of many long-distance tourers. Then, any motorcycle with a displacement of 500cc or more was automatically thought capable of long rides; getting there wasn't nearly as rewarding as *having gotten* there and being able to brag about the feat, time and time again, to your friends. The objective was neither the trip nor the destination but rather savoring the accomplishment of having made it. The longer and the more punishing the trip, the better. New York to San Francisco non-stop! Los Angeles to New Jersey in 45 hours! Alaska to Tiera del Fuego! And back!



Neat and trim, the XS-2 now carries an electric starter, and sports a disc brake with two five pucks. The stylish disc is a fantastic stopper.

PHOTOGRAPHY: LARRY WILLETT

But with accelerating technology and with more and more manufacturers marketing newer and more expensive approaches to motorcycling, the idea of Motorcycle as Macho began to fade slightly around the edges. Hundreds of guys have whipped across the country on Honda Fours and Suzuki 750s and Guzzis and BMWs.

After less than 1000 miles accumulated on the Yamaha 650, it becomes clear that it simply *is not* a long-distance bike, and engine vibration is the only reason. In all its other aspects the Yamaha is abundantly appealing. It's stylish, sophisticated, reliable as a chisel, predictable, cheap, easy to maintain, and absolutely and totally oil-tight. The 1972 650 is presently outselling the rest of Yamaha's street line, including that best-of-all-350s, the R5.

Vibration aside, it's not difficult to see why. Despite an increase in price of $104.00 over the 1971 model, the XS-2 remains as one of the greatest bargains in motorcycling, cheaper by $200 than the Triumph Bonneville, the definitive 650 vertical twin. The XS-2 offers much in the way of detailing: a solid tool kit, electric starting and a superb front disc brake.

First, the electric starter (new for 1972).The motor, which draws 150 amps, is located under the crankcases just forward of the centerstand mounts: it is controlled by a switch mounted in the right-handlebar-located compression release boss. When the compression release lever is squeezed toward the handgrip, two things happen: the cable-operated release mechanism pivots and lifts the exhaust valve off its seat, reducing compression in that cylinder; and the switch in the compression release boss activates the starter motor. Power from the motor is transmitted through three reduction gears to an engagement gear, which twirls the crankshaft. As soon as the engine is turning fast enough for the generator to produce 4 volts, a safety relay opens, which in turn opens a series of circuits, the last of which is the circuit between the switch and the starter motor. With the starter motor off, the engaging gear backs away from the driven gear. The exhaust valve, which has been open while all this starter action has been going on, is released to normal operation when the handlebar lever is turned loose.

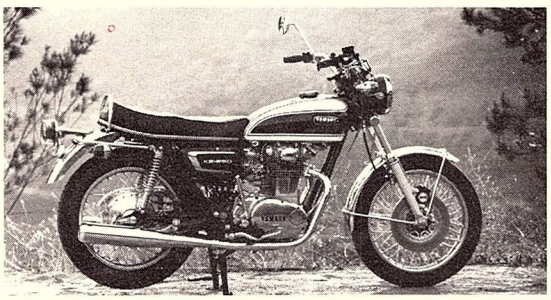
The big secret, of course, is in the compression release mechanism. Without it, the Yamaha would have to use a big starter mo-

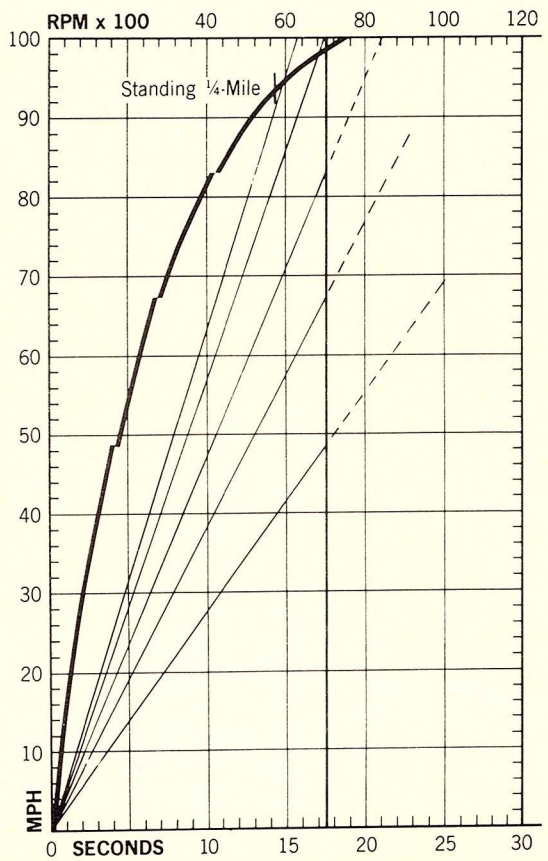
tor and an even bigger battery, and would as a consequence suffer an unnecessary weight penalty. No problems whatever were encountered with the starter while we were testing the XS: simply turn the fuel taps to the "on" position, depress the position open-or-closed choke lever mounted to the outside of the left carburetor, rotate the instrument-panel-located key one click to the vertical position, and pull the little lever. Starting is almost instantaneous, and the enrichening control can be raised in fifteen to thirty seconds without stalling the engine.

The XS-2 is the only 650 with a disc front brake which is dually appealing. Primarily it's nice because it works better than a drum. Secondarily, it adds a certain romance to the motorcycle, a factor that the Japanese are extremely aware of. Used to be a motorcycle could offer special mechanical romance in one area, and one area only: the engine. A bike is a lot different than a car. With a car the stylists can work with wheel design, slick hoods and fenders and scoops, tinted glass, all sorts of stuff. But a motorcycle is comprised of two wheels, a tank, a seat, a pair of side covers, and the engine, and it becomes exceedingly difficult to separate one from another visually. Honda introduced the disc brake concept to motorcycling with the CB-750, and suddenly riders had something besides the engine to talk about. A disc brake has cosmetic, as well as functional, appeal, and it can do wonders to lighten the appearance of a bike's front end.

Aesthetics aside, the disc brake (a version of which we might see on Yamaha's 350 for 1973) is fabulously effective. Unlike the Honda caliper, the Yamaha unit utilizes two live pucks. Honda's caliper has to pivot; pressure forces the one live puck into contact with the disc surface, and as more pressure is applied the caliper pivots *away* from the pressure, pulling the static puck into contact with the other side of the disc. The two-live-puck approach means that 1) the caliper unit doesn't have to pivot, which in turn means that it cannot rattle (a problem that Harley-Davidson experienced with their otherwise excellent Kelsey-Hayes disc brake); 2) the puck supports don't have to be convex to compensate for the pivoting action and wear; and 3) the disc doesn't have to float either, as on the Harley-Davidson roadracers.

There has been much talk about a single-disc front brake "pulling" to one side or another. Assuming that the front axle is strong enough, and the fork legs of reasonable heft, "pulling" is an impossibility. Certainly it was never experienced on the XS, nor was it felt on any of the Hondas or Nortons that we've tested. And of all the bikes we've ridden that were equipped with discs, the Yamaha set-up works the easiest. Everybody has heard of bikes you can stop with two fingers. How about a one-finger bike? The XS is one—truly. Just for the hell of it we plunged down through the Malibu Mountains using





YAMAHA XS-2 650cc STREET

Price, suggested retail	West Coast, POE $1399.00
Tire, front	3.50 in. x 19 in. Dunlop
rear	4.00 in. x 18 in. Dunlop
Brake, front	11.7 in. x 1.75 in.
rear	7.9 in. x 1.38 in.
Brake swept area	69.1 sq. in
Specific brake loading	8.5 lb/sq. in., at test weight
Engine type	SOHC 360° Vertical Twin
Bore and stroke	2.953 in. x 2.913 in., 75mm x 74mm
Piston displacement	39.8 cu. in., 653cc
Compression ratio	8.7:1
Carburetion	2; 33mm Mikuni Solex
Air filtration	Dry paper
Ignition	Battery and coil
Bhp @ rpm	53 bhp @ 7000 rpm
Torque @ rpm	40.1 ft/lbs @ 6000 rpm
Fuel capacity	3.3 gal.
Oil capacity	6.4 pints
Lighting	12v, 50 watts
Battery	12v, 5.5 ah
Gear ratios, overall	(1) 11.80 (2) 8.50 (3) 6.95 (4) 5.88 (5) 5.12
Wheelbase	55.5 in. Rake 27° Trail 3.9"
Seat height	30.5 in., with rider
Ground clearance	5.5 in., with rider
Curb weight	435 lbs., with ½-tank of gas
Test weight	590 lbs., with rider
Instruments	Speedo/odo., tach, neut. indicator, turn indicator
Fuel consumption	50 mpg
Standing start ¼ mile	14.23 seconds 93.26 mph
Top speed	110 (est) mph

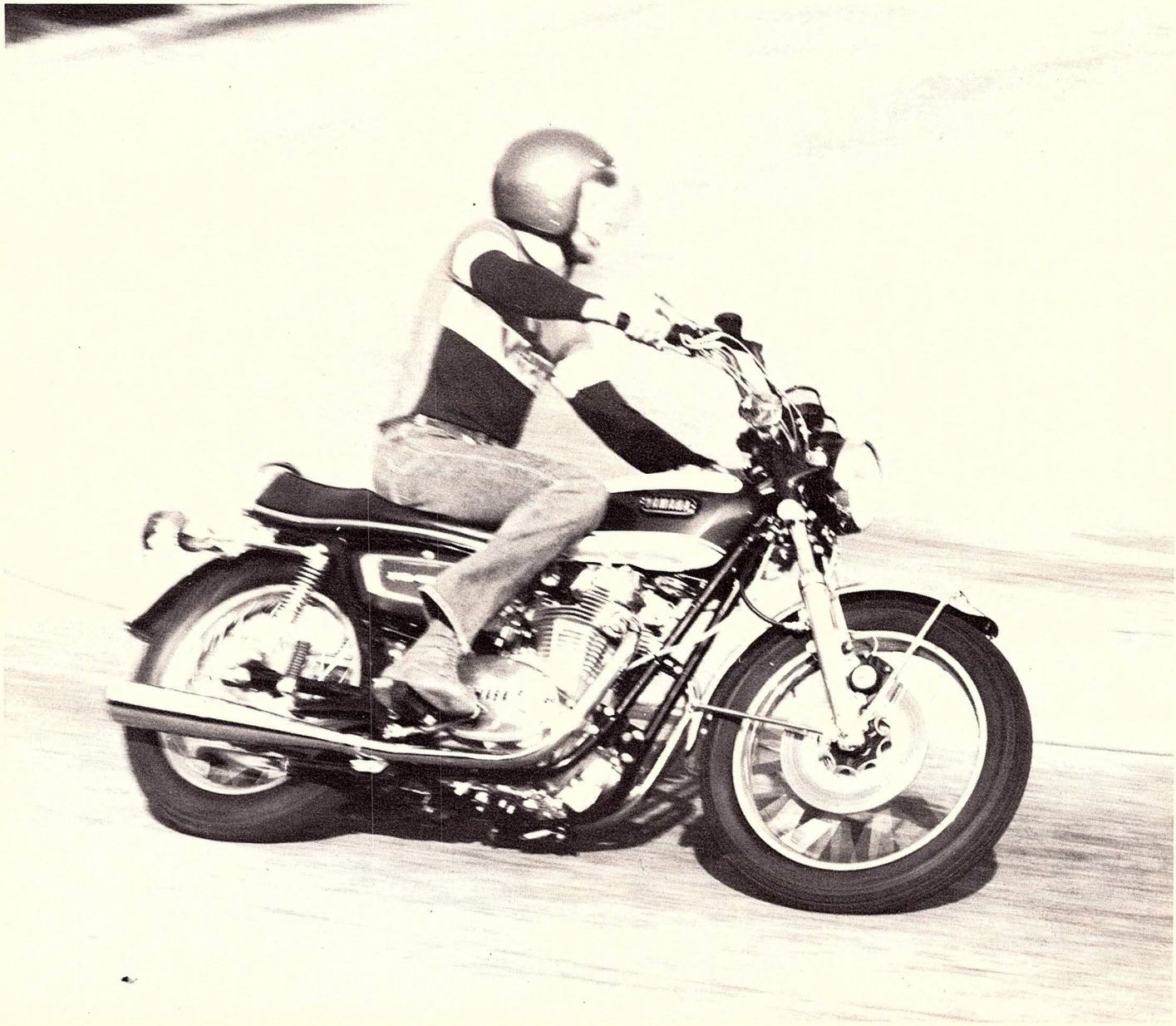
no rear brake whatsoever and one finger looped over the front brake lever. Never did we feel that more braking force was necessary, and never once did we feel that the disc was going to surprise us. It's a fabulous, fabulous brake: sensitive, progressive, light to the touch, yet capable of locking the front wheel at 70 mph if you so desire. And unlike other discs, the Yamaha system leaked not a drop throughout the duration of the test. Our only complaint is that the unit squeaks a little when it gets hot.

Beyond the addition of the electric starter, little has changed inside the crankcases. The benefits of SOHC have been well-rehearsed: fewer moving parts (thus less wear), less reciprocating weight (making it easier for the valves to follow the commands of the cam lobes), and, with properly-designed chain tensioners and idlers, less engine noise. And with the cam down between the valves (unlike a DOHC, where each cam perches above the valves), engine height doesn't necessarily have to be greater than the height of a pushrod engine.

The 653cc twin has earned a reputation for reliability, and it deserves it. The pressed-together crank is supported by four main bearings (all roller, except for the ball bearing outside the right crank cheek); the rods have needle bearings top and bottom. With a roller-type lower end oil pressure can be far lower than that required for a Triumph-type plain-bearing arrangement, which might be one reason the Triumph leaks so much and the Yamaha leaks not at all. Another reason certainly is that the XS uses crankcases split horizontally (Triumph and BSA cases are divided along a vertical plane), which not only helps keep the oil inside but makes the engine easier to work on.

The 11-plate wet clutch is about as nice as a clutch can get: positive, smooth, light at the clutch lever, and with a release so complete that finding neutral is never a hassle. But the transmission in our test machine wasn't as accurate and positive as it might have been. While the throws are certainly short enough ($3\frac{1}{16}$"), engagement wasn't especially crisp, and gearshift lever pressure seemed higher than necessary. Additionally the power transmission system (from the crankshaft to the rear wheel) was bothered by a surfeit of lash; smooth low-speed riding suffered as a result. And a cardinal sin of omission: no rear chain oiler. Chains take an awful beating under the best of circumstances; on a motorcycle as big and strong as the Yamaha 650, a constant chain-oiling provision is a vital necessity. It doesn't have one. Neither did the Triumph Bonneville (tested in the May 1972 issue of *Cycle*). The results are the same on both motorcycles: a rear chain that needs constant attention, constant adjusting, and frequent replacing. Triumph removed the chain-oiler primarily to keep oil and gunge off the rear wheel. We suspect Yamaha is thinking along similar

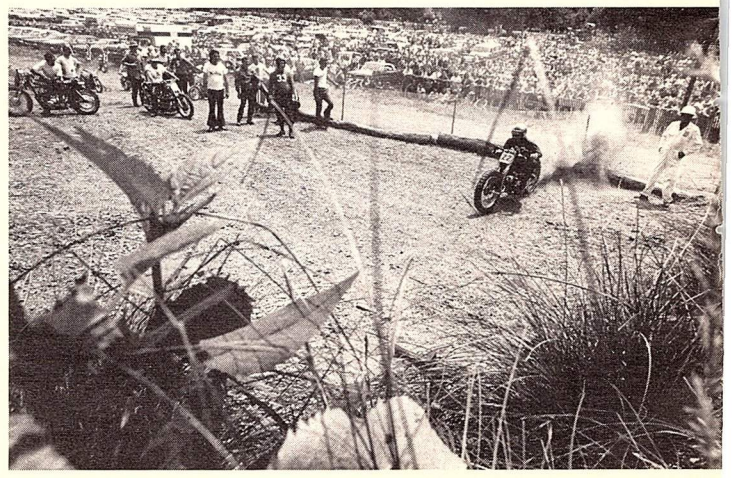
(Continued on page 62)



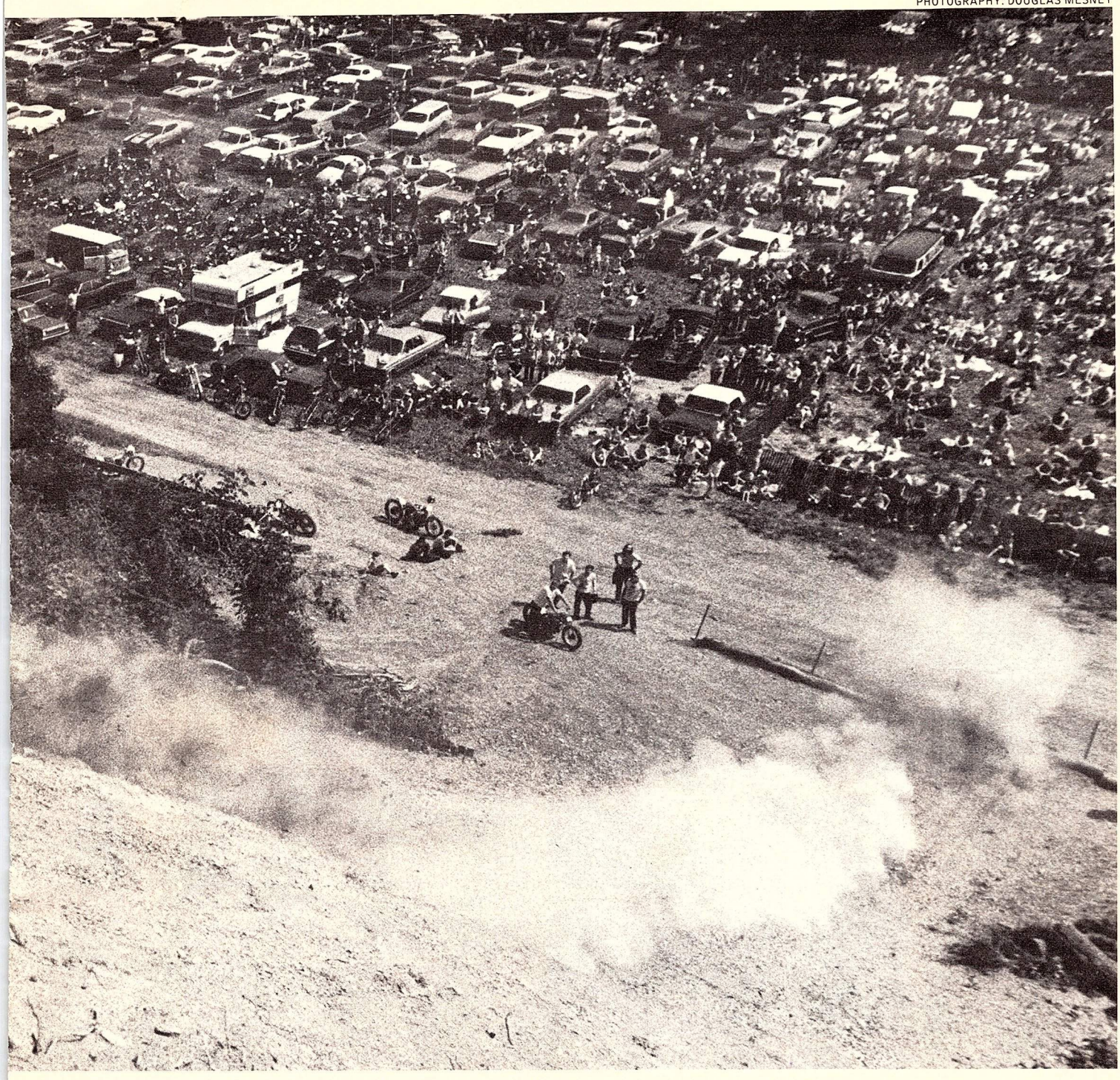
Professional Hillclimb

If life gets boring, try racing an all-out fuel dragster on a motocross course that goes straight up the side of a mountain.

BY FRANK CONNER



PHOTOGRAPHY: DOUGLAS MESNEY



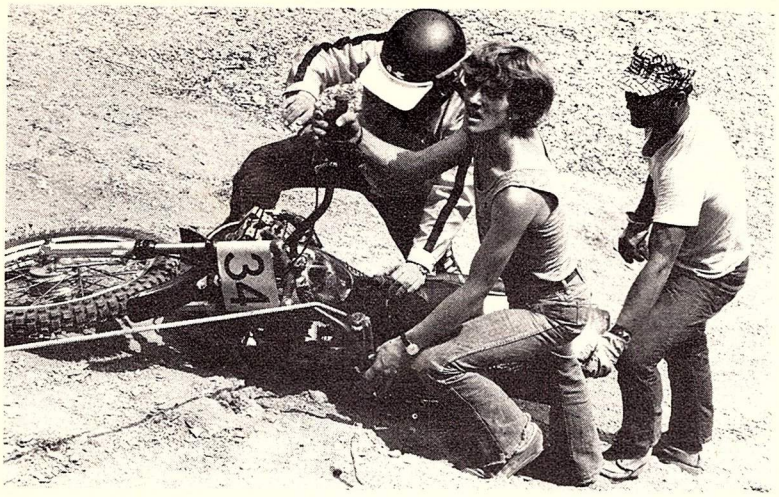
The Hill dominates. The instant you pull into the little valley outside Chillicothe, Ohio, that crazily tilted fifty-foot-wide track of raw dirt and rocks just blows your mind. The Hill is a personal challenge: it asks, "Who are you? What do you dare?" Even when you are deep in conversation and nothing is happening on The Hill, still you find yourself glancing up at it every few seconds, automatically.

On a hot Sunday afternoon in June, a gray-haired hillclimber named Earl Bowlby backs his bike up to the log and prepares to make his second run against The Hill. A spectator shouts, "Hey, Earl, you gonna run that thing on both cylinders this time?"

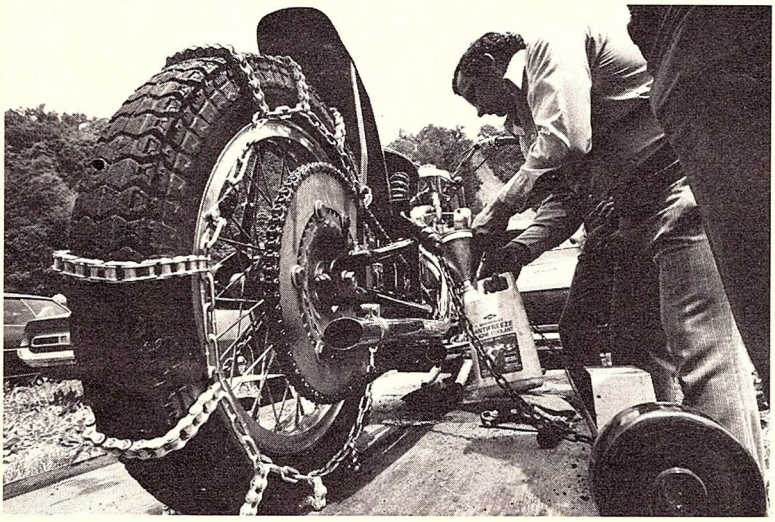
Bowlby grins and shouts back, "Hey, that's a good idea! Better still, why don't you come and ride this bike instead of me?" Bowlby looks casual and relaxed as he makes his final preparations for the run. But another rider has said of him, "Earl has a split personality. He looks like a schoolteacher, but he rides like a maniac. He never lets on what he's thinking, or how determined he really is, but he'll try stuff that nobody else will try, and somehow he gets away with it."

Bowlby's bike is a 750cc BSA that he built himself. Except for the chains on the rear tire, it looks like a fuel dragster (gone are the days when pro hillclimb bikes looked like mismatched collections of tractor parts). The bike weighs about 250 pounds and develops around 150 horsepower.

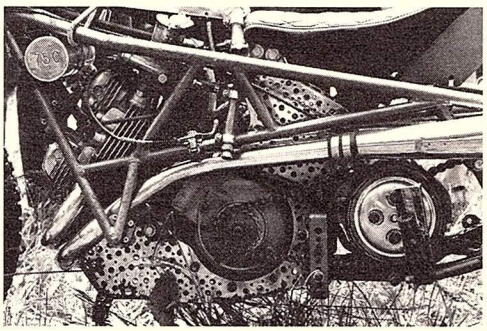
The Hill is vicious. It has not been attacked by the professionals in 37 years, and nobody knows how to ride it. The course looks like two gigantic rounded-off stair steps, 375 feet high. The first 60 feet of the climb is steep, and it is covered with loose shale, eight inches deep. It is almost impossible for people to walk across this part of the course; the few who do will take a minute or so to consider where to put their feet for each step they take. And with each step they send rivulets of shale cascading down the hillside.



(Left and Opposite Page) A serene calmness covers the professional hillclimb riders. The jokes are quiet and wry. But the tension is still there; it lies below the casual, friendly atmosphere.



(Top) There's no easy way to get off the hill, riding or heaving. (Above) Hardtails, chains and nitromethane add up to a lot of horsepower and traction. And a quick one-way ride.



(Above) In hillclimbing everyone builds his own special, and the machines are professional, sanitary bikes. The old days of mismatched collections of parts are gone forever.

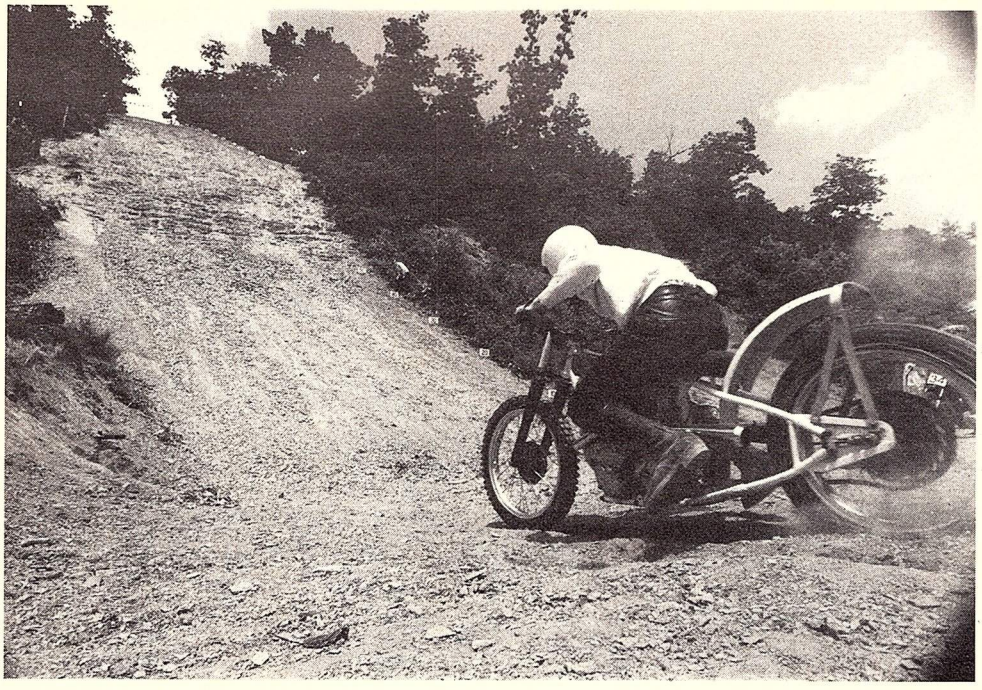
Above the shale runs a series of ledges, guaranteed to throw the bike off course. The rest of the course is rutted everywhere, and the ruts run in all directions. The Hill looks more like an observed-trials section than a hillclimb.

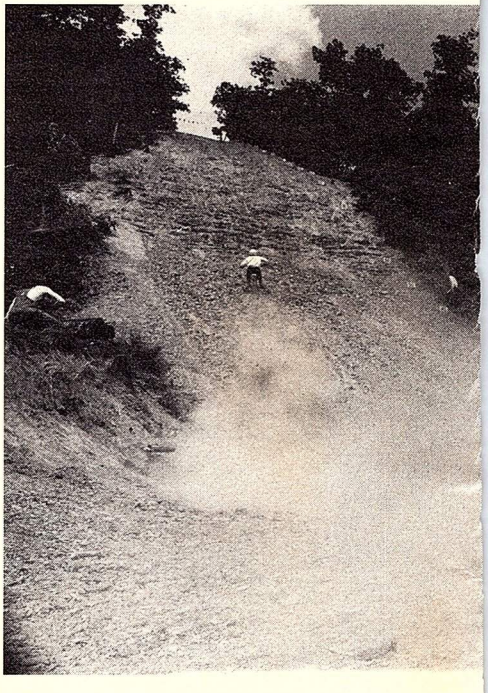
Earl Bowlby climbs into the saddle and hooks up his kill strap. At the other end of the thong is a piece of plastic that looks like a guitar pick. Bowlby opens an ordinary pair of contact-breaker points bolted to the motorcycle near the steering head, and he lets them close on the plastic. The breaker points are wired into the ignition circuit; if Bowlby falls, the plastic strip will be yanked from between the breaker points, which will close and short-circuit the ignition.

The Bowlby Beezer is representative of good 1972 pro-hillclimb bike design. The rules say that you can build anything you like, as long as you don't use true fuel injection or a supercharger. The motorcycles are divided into two engine classes: Formula B, with 500cc OHV engines or 750cc side-valve engines; and Formula A, with 750cc OHV or 1100cc side-valve engines.

To understand why professional-hillclimb bikes are built the way they are, you have to understand what it's like to ride one. Roger Kaler says, "There's a lot of pressure on you when you make your run. This isn't like track racing, where you often have a chance to make up for a mistake on the next lap. Here you've got maybe ten seconds to get it all together—to make a money ride up the hill without flipping the bike. One mistake and you're out of the money.

"Two or three of the best riders can pick a path up a hill like that and follow it, but the rest of us . . . we try to select a trail up through the first bad place, and after that we just hold on. So when you dump the clutch at the start, your mind is way behind you, and it doesn't even begin to catch up until you're a quarter of the way through your run. Believe it or not, I can't even hear the sound of my machine when I'm riding it; all I know is that I'm moving right along. It's eerie."





Carl Wickstrand says much the same thing: "After you begin the ride, you've got no time to think about what you're doing. You do it by reflex, or you don't get it done. Every once in awhile you get a little breather, and then you can decide to change course or something, but 90% of your riding is purely automatic."

Under those circumstances it would be nearly impossible to shift gears during the ride, so the motorcycle runs in one gear only. The ratio used generally falls between second and third gears in a street machine. Because there is only one gearbox ratio, the engine must be built and tuned to deliver an ungodly amount of torque over a wide rpm range. For example, Carl Wickstrand's machine is tuned to come on strong at 3000 rpm and accelerate to 8000.

Power-to-weight ratio is the name of the game. To get it, you can either build the bike lighter or you can crowd more power out of the engine. But you can only go so light—today's machines range in weight from 220 to 330 pounds. To reach those figures requires months and months of chopping off everything unessential, grinding, and drilling. And the builder must have an eye for structural rigidity; unless the frame is just right, the rear frame tubes will twist like damp spaghetti when the rider dumps the clutch on 150 horses. In lightening their machines, the hillclimbers seem to be bumping up against the limits now, so they are turning to increased engine power to find an edge over their competitors.

Until three years ago, a pro hillclimber could get by using alcohol for fuel. But no longer. Now the competition is so ferocious that everybody burns nitro. At present the blend includes anywhere from 40% to 90% of nitromethane. A few riders, like Roger Kaler, also mix hydrazine (a deadly poison, and only slightly less dangerous to handle than nitroglycerine, hydrazine costs over $100 per gallon).

Professional hillclimb bikes are fitted with chains on the rear tire, a lot like the snow chains used on cars. During the run, the tire and chains are spinning and slipping over the ground; if a chain grips the ground and

gets traction, it will flip the motorcycle backwards, instantly. To keep the chains from getting too much traction, the motorcycles have been built with a solid rear end—no rear suspension.

Roger Kaler explains, "When the rear tire hits a bump, the rigid frame lets the tire bounce up and skip over the bump and keep spinning; with a swingarm, the rider would get too much traction. But now, with the hotter fuels, we're starting to get so much more horsepower. As we go faster, we just can't control the bikes as well. Imagine putting a rigid-frame machine on a motocross track. I think we'll probably start going back to swingarm frames next year."

The hillclimb motorcycle usually has six to twelve inches added to the rear part of the frame, giving it a wheelbase of 62 to 68 inches. The rider likes to get the engine as low and as close to the front wheel as he can. With the long wheelbase and the low/forward center of gravity, the front wheel will lift more slowly, and the motorcycle will be less anxious to loop out suddenly. The difficulty is in getting the weight distribution arranged to give the rear end just enough—and not too much—traction.

Most of the riders have shown great ingenuity in getting the saddle height as low as possible, but that will probably change in the next year or so. Until two or three years ago, *all* of the good riders sat in the saddle to make their runs, so the saddle height had a great deal to do with the center of gravity of the motorcycle. But now most of the riders are standing on the pegs to make their runs, so the height of the saddle no longer matters that much.

The hillclimb machine has a unique kill switch in the form of a spring-loaded lever, under the rider's index finger on the twistgrip. When the bike gets going, it's so hard to hold onto that the rider finds it almost impossible to hold on *and* rotate the twistgrip at the same time. So the common practice is for the rider to turn the throttle wide open at the start of his run, and leave it that way. Then, if the front end starts to come up or the rear end starts to go sideways, the rider

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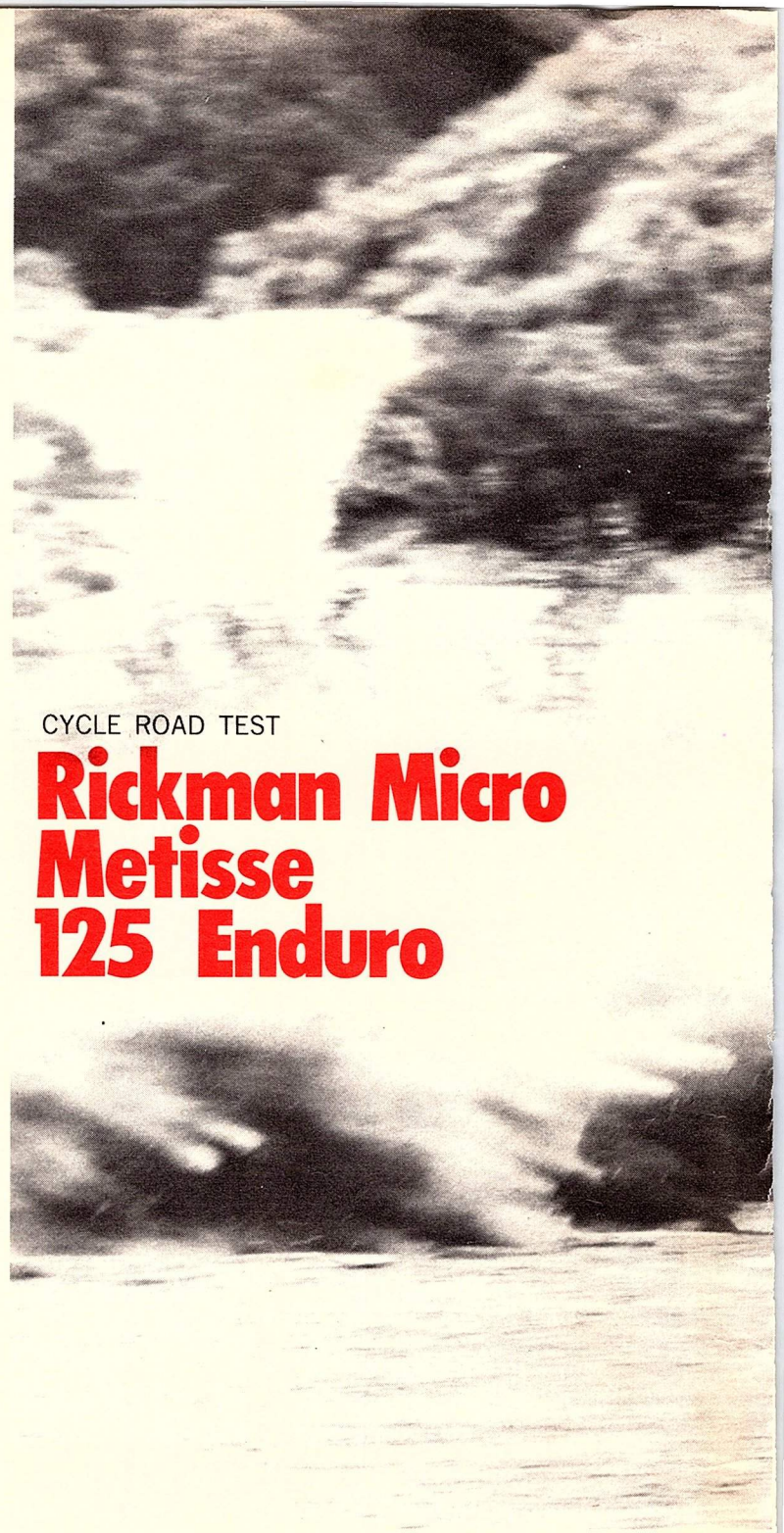


CYCLE ROAD TEST

Rickman Micro Metisse 125 Enduro

Don and Derek Rickman were racing motocross in Europe on gigantic four-stroke behemoths when most Americans thought "motocross" was some sort of dashboard figurine. We were involved with the AMA pro circuit and TT Scrambles, where weight was not so critical either in handling or in testing the rider's endurance. But amidst the more physically punishing motocross wars in Britain, the Rickman brothers were realizing lighter bikes would be a lot less tiring and certainly easier to handle. It was Derek who, in 1956, first used Avon fiberglass components and a whole new rear frame section to carve about 25 pounds from his already stripped-down BSA Gold Star 500 single.

He called it "Mongrel," a word that had the right connotation but the wrong ring. Derek's wife is French and she suggested the French equivalent—Metisse. The bike was green and carried number plate 73, and it worked so well Derek built another one (number 74) for brother Don in the back room of their father's motorcycle shop. European motocross fans soon knew the speedy brothers by their back to back numbers and matching mongrel machines.

But the bikes still weighed closer to 400 pounds than 300, so in 1960 the Britishers built their first complete frame, with oil inside the tubes, around a 500 Matchless single. This frame, along with other lightening, pared the Matchless to 325 pounds. Both brothers had a successful racing season that year and were flooded with inquiries from competitors about supplying frames commercially. Thus it all began.

In 1962 the Gore Road factory opened about a mile from their dad's shop on England's South Coast and started producing frame kits for Triumph twins and the Matchless single. From the beginning Rickman components were renowned for quality materials, craftsmanship, light weight and superior handling. The exquisite nickel-plated finish and picture-perfect welds sorely tempted even those who couldn't afford their high price, which served to elevate Rickman's prestige even further.

Word soon spread to America where the Hodaka marketing firm of Pabatco in Oregon was first to take on the distributorship, followed by Bud Ekins' Triumph Shop near Los Angeles. But it was not until 1966 (when the line went to Steen's, an Alhambra, Calif., accessory distributor) that a large marketing push quickly resulted in dozens of the gleaming, oil-filled frames appearing in competition, mostly in the California desert. Still, a rider had to supply his own wheels, forks, shocks and engine, which was a frequent cause of lost sales. Steen's soon succeeded in convincing the Rickmans to supply a complete chassis. By 1968 there were Rickman conical alloy hubs, Rickman forks and proprietary wheels, shocks and triple crowns which came with the frame kit. Also included were mounts for such engines as the 650 Triumph, 441 BSA Victor, 250 Bultaco, 650 BSA, 500 Triumph, etc. But many of Steen's younger clientele were unaccustomed to the ways of big four-stroke dirt bikes. They wanted a Rickman with a lightweight two-stroke engine that they didn't have to install themselves. Steen's convinced the Rickmans to move toward production of complete machines, and to this end the brand new 20,000-square-foot 40-employee Stem Lane factory was dedicated in 1970. From here comes a 250 motocross bike with a Montesa engine, a Zundapp-powered 125 motocrosser and enduro, and a Hodaka 100 MXer. With a four-model line available in quantity, the Rickman brothers signed a contract with BSA/Triumph on Sept. 1, 1971 for U.S. distribution.

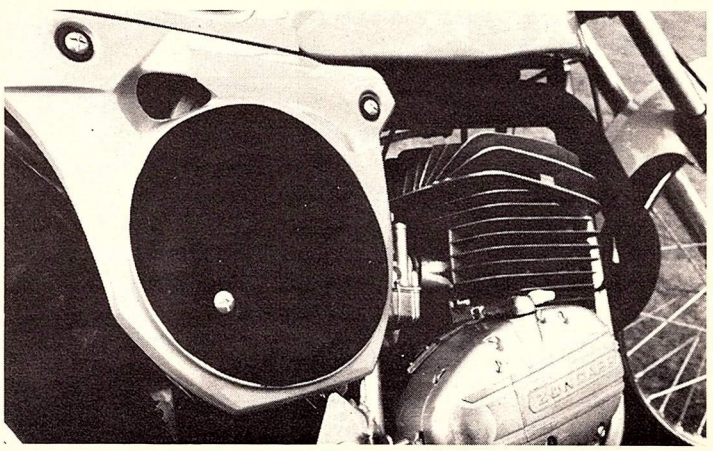
Their Micro-Metisse 125 Enduro is only two years old, but nevertheless a strong contender in the street-legal dirt-oriented playbike class. It has the exact same frame and engine as the motocross model, differing only in the fitting of a battery, horn, lights, upswept muffled expansion chamber, sidestand and slightly restyled tailpiece section to accommodate the stoplight. Tires are Trials Universal instead of knobby.

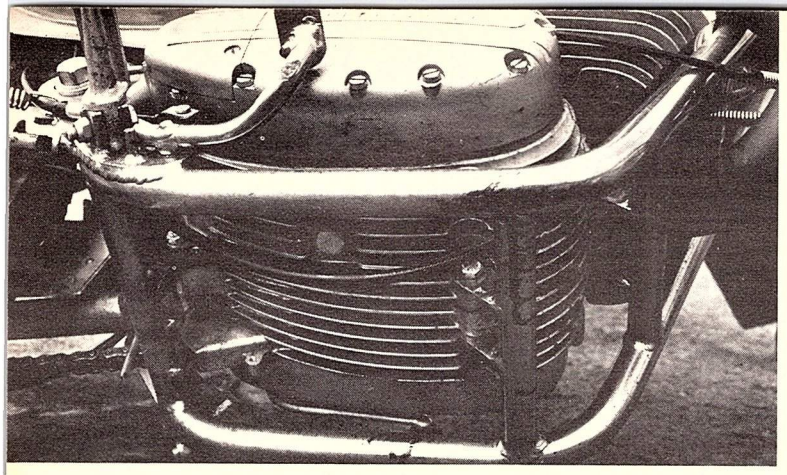
Zundapp supplies the ISDT-proven 123cc two-stroke powerplant; it produces 16 hp at 6500 rpm and is seemingly unbreakable. Square cylinder dimensions of 54x54mm combine with 11:1 compression, a 26mm Bing carb and a Bosch flywheel magneto to light off premium fuel mixed 24:1 with two-stroke oil. The bothersome hassle of premixing should be unnecessary in light of so many other machines with automatic oiling, but added cost is clearly the reason for sacrificing this convenience on the Rickman. At $860 it's holding its own against similar (and sometimes higher) prices for the Puch, Penton, DKW, Dalesman, etc. But adding an oil pump to the Rickman would boost cost beyond competitive levels. Premixing is one of the reasons why none of these machines will ever enjoy the popularity of Kawasaki, Suzuki and Yamaha 125s, which still undercut the Rickman's price by an average of $287—and include metered oiling.

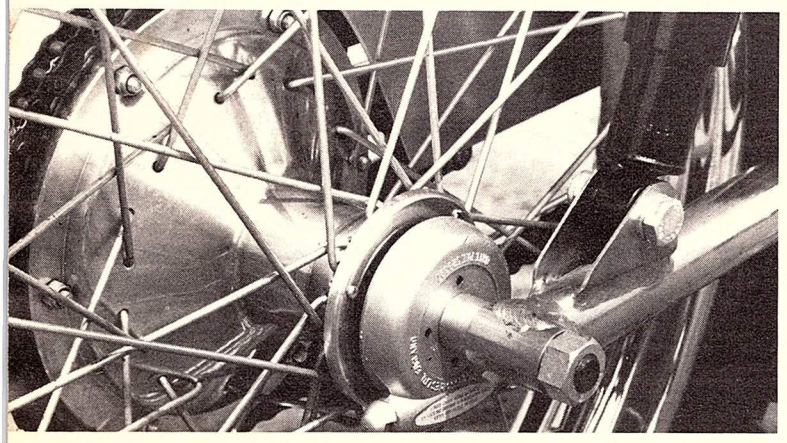
Inside the engine there is a caged needle bearing at each rod end and ball bearings on the crank and mainshaft, while the layshaft

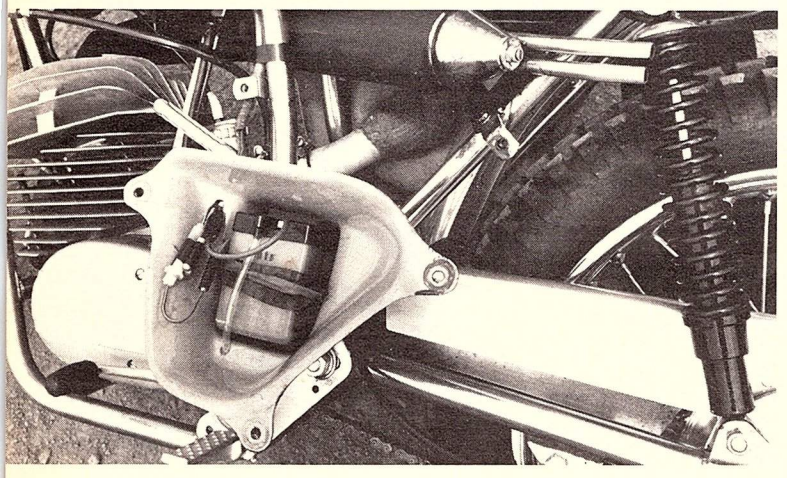
PHOTOGRAPHY: BILL DELANEY

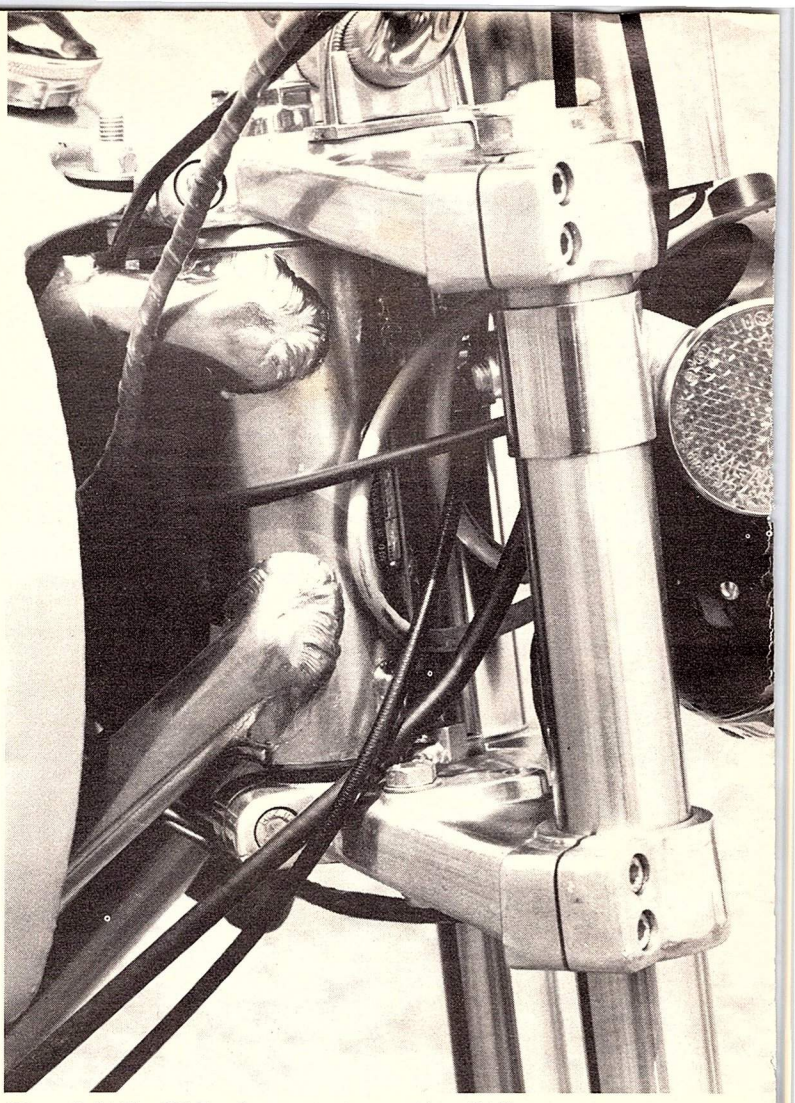
(Above) Rickman gives spot-on tracking on dirt and pavement. (Right) Air intake for the Zundapp engine opens above number plate/sidepanel.











(Upper Left) The 125 Zundapp engine is tractable, will idle and delivers its power in a smooth, even way. The double-cradle frame is beautiful—mild steel now replaces 531 Reynolds. The welding (Above and Middle Left) is first-rate, though junctures lack the old Rickman look of absolute perfection. Though the brake-and-hub is a beauty, the rear brake did not work well. (Lower Left) The dual-stinger pipes drool mung; exhaust lacks a proper spark arrester.

spins in needles on the drive side and balls on the clutch side. There are four generating coils in the magneto: two supply AC current to the ignition coil, one sends AC through a diode where it becomes DC to charge the battery, and the other operates the headlight directly since the battery powers the horn and stoplight only. A fuse protects the battery system and a clipper diode regulates current to the headlight to prevent the bulb from blowing in case the engine accidently over-revs.

A few other motorcycles should enjoy the Rickman's fine clutch. Five driving and five driven plates bathed in gearbox oil are controlled by 10 springs, each smaller and softer than those on clutches employing only five or six heavier springs. Resultant benefits at the handlebar are light pull and a wide, progressive friction point which simplifies moving off the line and feathering in first-gear rough stuff. There is noticeable drag before the gearbox oil warms up, but after a few miles, disengagement is clean and complete. At no time during more than 700 miles of hard testing in both on- and off-road terrain did the clutch slip or come out of adjustment.

One would expect that since the Enduro is merely a motocrosser with lights, its personality must reflect the usual temperamental and peaky character of its species. Not so. Even with 11:1 compression the Zundapp engine is tractable, able to idle, and smooth in its delivery of power. In fact, after a short nip around the block you'd swear this engine wouldn't stand a chance in the 125 MX class, but then you won't appreciate its true power until you ride it hard in the dirt, using the gearbox constantly and letting the engine thrive on the revs it needs to deliver strong performance. Down low on the powerband the willing two-stroke stays in there, but it just doesn't have enough bottom-end muscle to threaten any tree stumps. If you're patient enough to sit back and wait, the Rickman will eventually turn into a tiger, certainly equal to its peers in the 125 Enduro class.

During our photo session at Indian Dunes motorcycle park west of Castaic, California, one of those 13-year-old-boy wonders was smoking around the motocross course on a hot 125 Sachs 'crosser, looking truly professional in Full Bore Boots, Jopha mouth guard, all the trimmings. He was clearly the fastest man on the track, and just to see how the street-legal Metisse would do against an out-an-out racer, we fell in about 20 feet behind, not expecting much. Midway through the third lap the boy wonder had only gained another 20-25 feet when our rear Trials Universal finally reached its limit

Hard riding brings out the best in the 125 Rickman. Suspension is a superb Betor/Girling combination. The engine is bulletproof. The engine just can't be fully appreciated until wrung out hard in the dirt—using the gearbox to keep it on the boil.

and we ate a haybale. For spotting him 70 pounds and knobbies, the Rickman did remarkably well. Hard riding brings out its best.

Aside from a few missed shifts when riding fast and a subtle grinding when not using the shifter with authority, we experienced no problem with the well-spaced five-speed gearbox. Total throttle shut-off and deliberate boot action result in clean shifts, though shorter lever throw would enable quicker gear changes with less foot movement. Neutral snicks into place amazingly easily with a gentle nudge of the left-side, down-for-low shift lever, even at a standstill.

Out on the open highway the logical cruising speed is 45-50 mph. From there up to the indicated top end of 63 mph engine noise and vibration increase to the point of nullifying any advantage of the 10-15 mph faster speed. Exhaust noise is no more irritating than any two-stroke, but the rider must also endure decibels from the irregular pop of the Zundapp's frequent four-stroking and surging—all of which is amplified by huge cooling fins. It gets to be quite a serenade after while, even when your head is enclosed within a Bell Star.

Except for the irritation of four-stroking and surging which are mechanically harmless and inherent in two-stroke motors, the Rickman is more than passable for back-road meandering on pavement. We became good friends with the blue and silver Metisse in two weeks of commuting 35 miles to Cycle's new California shop in Westlake Village on fabled Mullholland Drive, a two-lane mountain twister which includes a 10-mile dirt fireroad section. Seventy miles a day, taxing the tiny 125 up long hills with a 210-pound load, riding hard on the fireroad and sometimes sustaining 60-mph plus on the straights, never made the Rickman falter. It ran extremely cool, started on the first kick *always* and invariably settled into a quiet idle even after the most punishing run. Very impressive engine. Bulletproof. One Champion L3G plug through the whole test and it was still good at the end.

Smoking out the exhaust before 5-6 miles of warm-up is borderline unacceptable in these days of pollution concern, however the whispy blue trail diminishes as engine revs and temperature rise. The odd dual-stinger tailpipe developed in Germany may help snub noise and set up proper backpressure, but doesn't allow all the oil from exhaust gasses to reach atmosphere. Black mung collects in the stinger, then drools all over the left side of the otherwise pristinely clean Rickman. Such a shame, because it's a serious problem, but one which is being rectified presently according to BSA/Triumph

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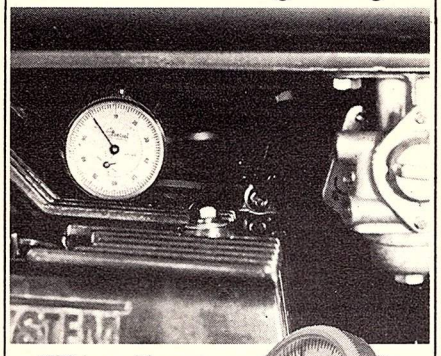

#278 in position on center cylinder of Suzuki 380

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officials. The change will also include incorporation of a built-in spark arrester on the end of a new, single stinger; the current 125 doesn't have a spark arrester, an unforgiveable oversight on any machine with "Enduro" in its title. Another sin is the omission of a trip mileage indicator on an enduro bike speedometer, though we are assured a change is due here too. We'd like to see a toolkit and reserve petcock added at the same time. There's nothing quite like being out in the boonies, and then walking back for want of a wrench or gas.

Aesthetics on the Rickman are unparalleled. Silky smooth glass work—U.S. Racing Blue—blends perfectly with the sheen of nickel plating to accent simple and functional looks. No flares, fancy paint or gimmicks. Stand back and take a look. Few other machines even come close. In size the bike is the biggest 125 on the market, but weighing in at a petite 210 pounds fully gassed it feels right even for a small youngster. A big guy will end up sitting on the seat's only hard spot, but other than that the Rickman fits everybody, and all the body-to-control space relationships work out well.

If any aspect of the bike surpasses its looks, it's handling. That's where the brothers built their reputation, and this bike will help them maintain it. Ceriani or Metal Profile forks on last year's model have given way to Betors, and they are superb, highly responsive to the tiniest irregularities yet tough enough to soak up big berms without running out of travel at either end. Girling shocks are most compatible with these excellent forks in the softest of their two positions. The double-cradle frame has lost some of the former Rickman glamor in production versions because mild steel now replaces Reynolds 531, and tube junctions and welds don't have the old look of absolute perfection, but there is definitely no loss in performance. Spot-on tracking on both dirt and pavement is the frame's forte. It goes where it's pointed, and it doesn't do unexpected things in transient states.

Somewhat unconventional geometry adds up to this slow and predictable obedience: a long swing arm of 1-inch-diameter tubing (compared to the frame's .875" dimension) places more weight forward for better stability and less wheel lofting, while a 31° head angle (most bikes are 26–28°) and 4¾ inches of trail also add to steady handling characteristics.

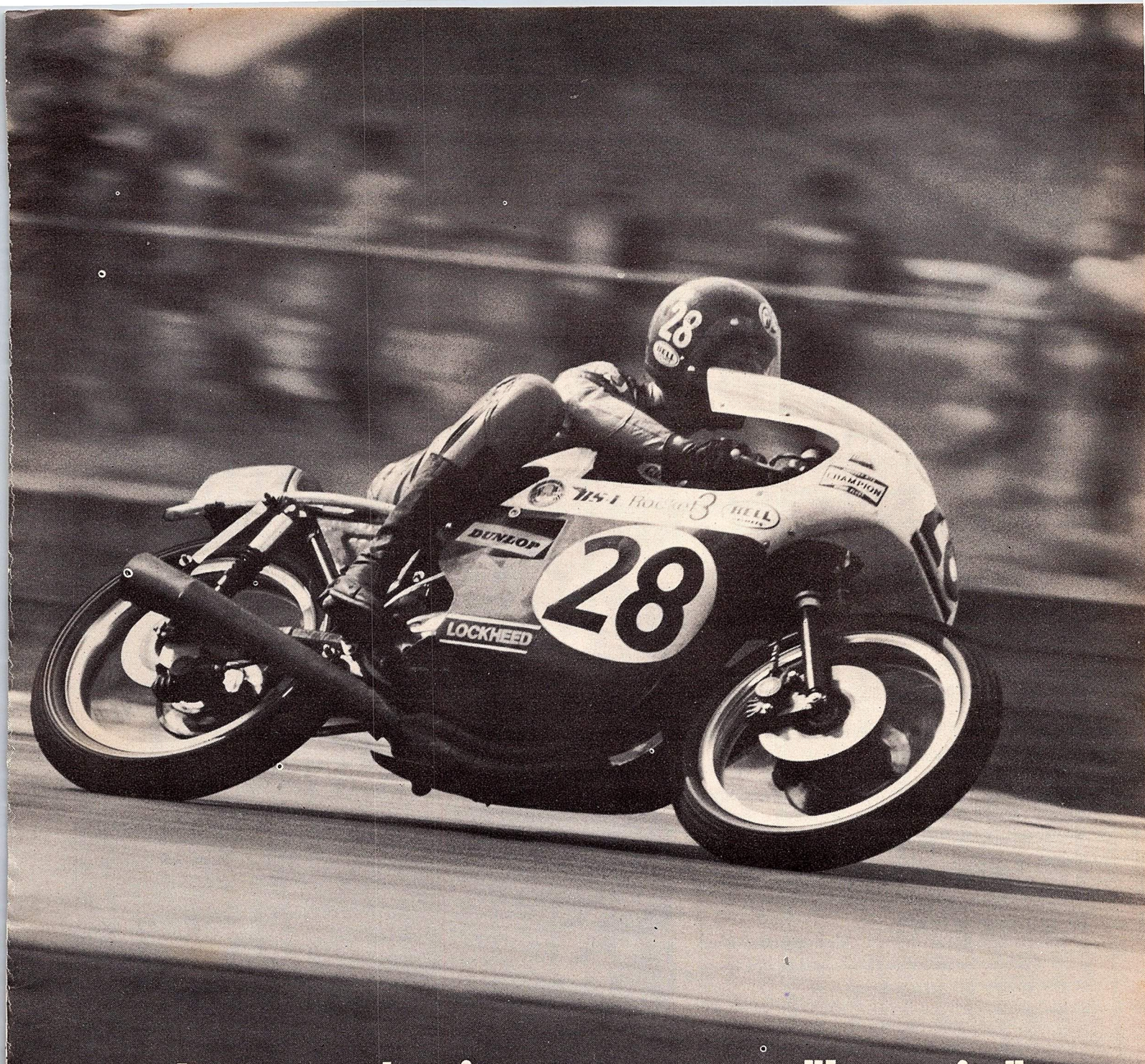
Traction from the thin-section 2.75 x 21 front tire is somewhat precarious at times and could be improved with a 19-inch wheel and a fatter skin. Twenty-one inch tires are especially effective for the soft loam of a motocross course, but can't match a bigger footprint in sand, mud, downhill braking or hard-surface cornering.

Up front the single leading shoe brake is excellent, having enough progression to prevent lock-ups in dirt, and enough overall strength to be quite effective on pavement. But it works by itself. The rear binder is rendered almost worthless by a long cable incorporating a rubber-mounted taillight activator switch which soaks up leverage like a sponge. Improved rear brake linkage is another change due on future models, according to BSA/Triumph.

If you're looking for a reliable motor in a frame that handles, check out the Rickman. Any bike with a solid hold on these two attributes can have a few shortcomings: they suddenly don't matter as much when driving hard into a sharp dirt turn with complete confidence, or finishing an enduro without a single mechanical hitch. In the end you judge a motorcycle first by how it rides, then by the goodies and features and minor deficiencies and price. As a riding motorcycle, the Rickman is right. ◉

RICKMAN 125 ENDURO

Price, suggested retail	West Coast, POE $860
Tire, front	2.75 in. x 21 in., Dunlop Trials Universal
rear	3.50 in. x 18 in., Dunlop Trials Universal
Brake, front	5.5 in. x 1 in.
rear	5.5 in. x 1 in.
Brake swept area	34.54 sq. in.
Specific brake loading	12.04 lb/sq. in., at test weight
Engine type	Piston port two-stroke single
Bore and stroke	2.13 in. x 2.13 in., 54mm x 54mm
Piston displacement	7.51 cu. in., 123cc
Compression ratio	11:1
Carburetion	one; 26mm; Bing
Air filtration	Paper element
Ignition	Bosch flywheel magneto
Bhp @ rpm	16 @ 6500 rpm
Fuel capacity	1.8 gals.
Oil capacity	(in fuel) pints
Lighting	6v, N.A. watts
Battery	Yuasa 6v, 2 ah
Gear ratios, overall	(1) 3.40 (2) 2.17 (3) 1.53 (4) 1.26 (5) 1.05
Wheelbase	52.25 in.
Seat height	30.5 in., with rider
Ground clearance	9 in., with rider
Curb weight	204 lbs., with ½ tank of gas
Test weight	414 lbs., with rider
Instruments	Smith 85-mph speedo
Top speed	63 mph
Sound Level, CHP Standard: 87 dB(A)	



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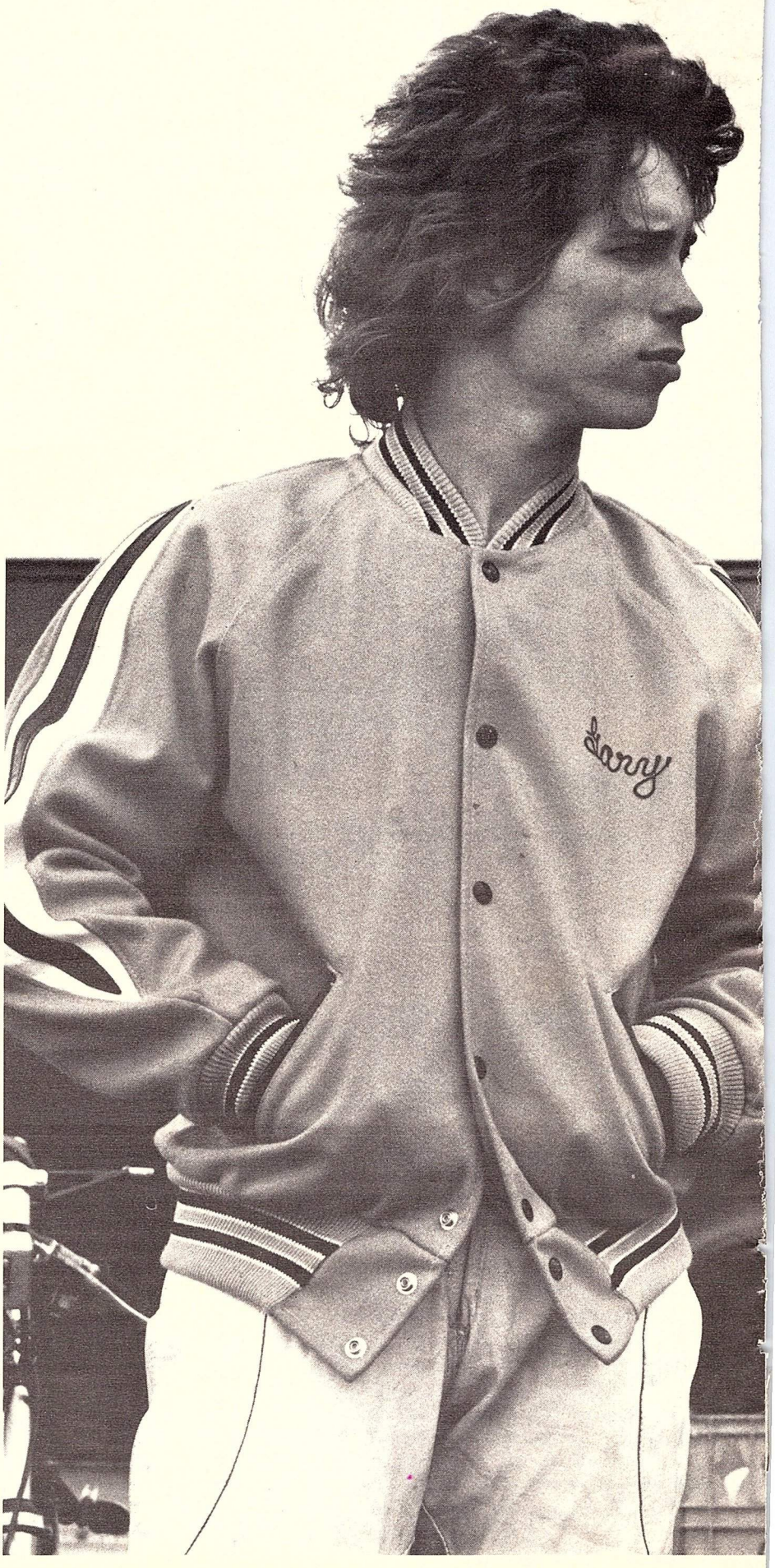
GARY FISHER'S LOUDON

BY JESS THOMAS



There are days when a racer wakes up and he knows. He can feel in his bones that he will go fast.

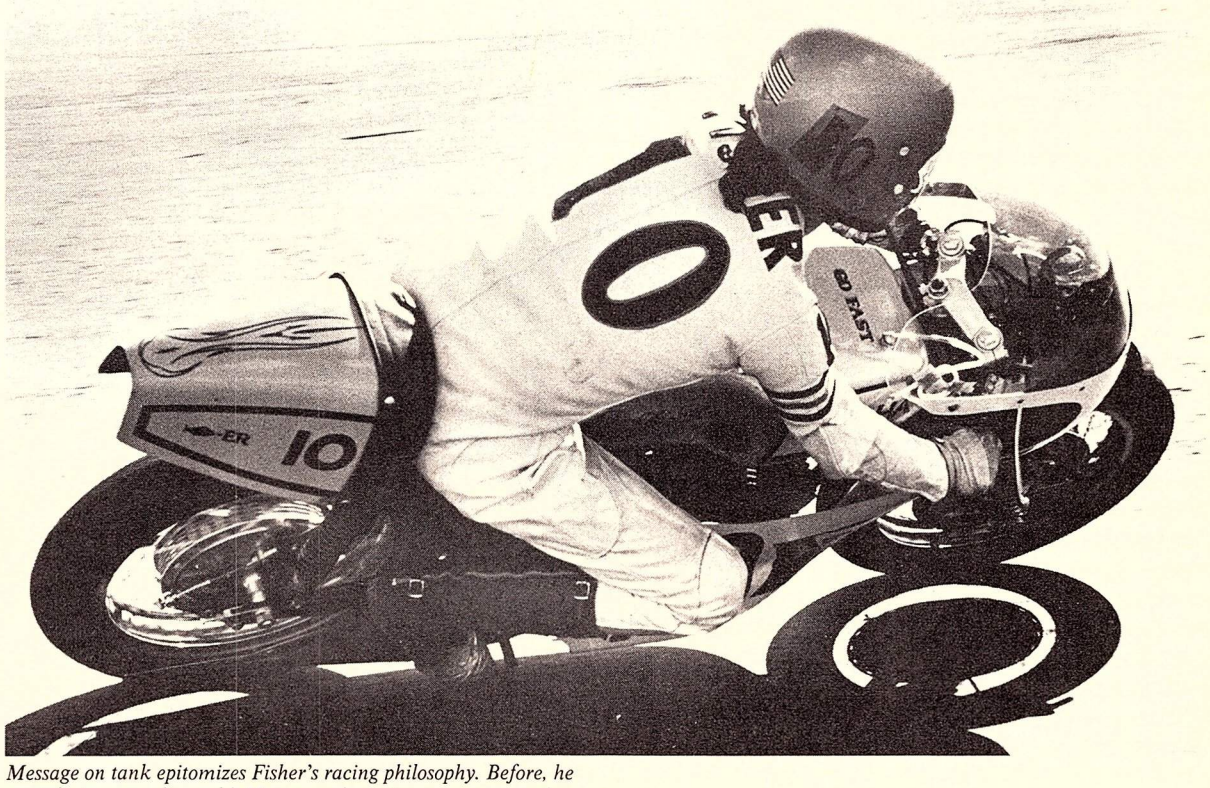
In his first really brilliant roadracing performance as an Expert, Gary Fisher served double notice to the resident favorites. He beat the best of them, and he did it twice. Most of us expected Gary to do well in the lightweight Expert/Junior combined race on Saturday, but we all figured that Carruthers or Mike Lane or Ron Pierce would lead the way to the flag. And with the 750 Kawasakis sorted out and the new aluminum-engined Harleys finally approved, no one in hell would have given Fisher's box-stock 350 Yamaha more than an after-everybody-else-blew chance in the Expert race on Sunday.

When I first talked to Fisher, during Friday afternoon practice, I could sense that he was in an unusual state of mind. His eyes were clear, and they focused sharply on me when I asked a serious question. He was abnormally quiet and the forced, nervous laughter was missing. His head was held high and his neck was straight. It was the calmness of a man who is sure of himself and what he is about.

Later, Gary was out practicing on his 250 Yamaha, cannily circulating in some very fast company. His dad was marking down times and notes as Gary came into the pits. They were satisfied with the 250: the gearing was set so that the engine would just show 12,000 on the tach at the crest of the hill on the back stretch. The plugs looked good and the new tires were scrubbing-in nicely. They checked the ignition timing once more and then covered the bike with a tarpaulin.

For the past two years, Fisher has been riding Ron Krause's big Honda 750 in the large-displacement class. He has led several Nationals on the bike, including Daytona, but each time the engine packed up long before the finish. Krause had the Honda at Loudon, and Gary took it out for a few slithering, wobbling laps. It was simply too much weight for the tight, snakey, slick course. Fisher said that the bike felt as if

Skittering into the first turn after the start, duHamel leads, but Rayborn (14) and Fisher (10) got by on lap one.



Message on tank epitomizes Fisher's racing philosophy. Before, he went fast anyway he could. Finesse and constancy are new goals.

PHOTOGRAPHY: JADIE PUTTERMAN, JONATHAN RAWLE, BRUCE FINLAYSON

the chassis bearings were all shot and the frame had a hinge in the middle. Because of the feeling, and for whatever other reason, Fisher chose to ride his own 350 Yamaha instead.

The Yamaha was one that Fisher had been trying to buy for a long time—for months. Yamaha International hadn't even been able to supply him with an engine to use in the frame of his 250. In desperation, a call was placed to the Canadian Yamaha importer, Fred Deeley, Ltd., in Toronto. Trevor Deeley had a complete machine and a spares kit available for a rider of Gary Fisher's obvious ability. On Wednesday evening before Loudon, Gary's dad and Ed Smith (a home-town entrepreneur and Gary Fisher supporter) drove non-stop to Toronto and then back to Loudon with the new machine in time for practice.

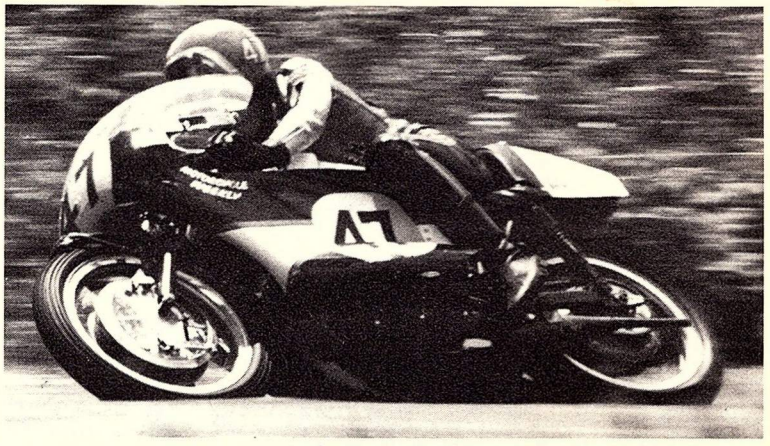
Saturday morning's event was the Novice race. John Long repeated his Daytona and Atlanta performances, jumping out into a huge lead from the start. Shortly after halfway, Mike Devlin (who was in second on a Vesco Yamaha) clipped the back wheel of a rider he was lapping and crashed. The corner flag men were asleep, as usual, and seven other riders bit the dust in the spilled fuel before the warning was put out. The race was stopped to clear the slick and the referee chose to call it a contest at that point. John Long had easily won the shortened race, then fell in the same slick on the cool-off lap.

Fisher had retained his sureness overnight and was one of the Expert/Junior riders who walked over to inspect the corner where all the Novices crashed before lining up for the lightweight race. At the drop of the flag, Fisher jumped into an immediate lead and was never seriously challenged. Ken Roberts, on a factory team Yamaha, gained a few feet on Fisher occasionally, but it was when Fisher was busy "saluting" his friends as he lapped them. At the finish, Fisher led Roberts, Yvon duHamel (on a 350 Kawasaki single), and Daytona winner Don Emde (Yamaha) across the line.

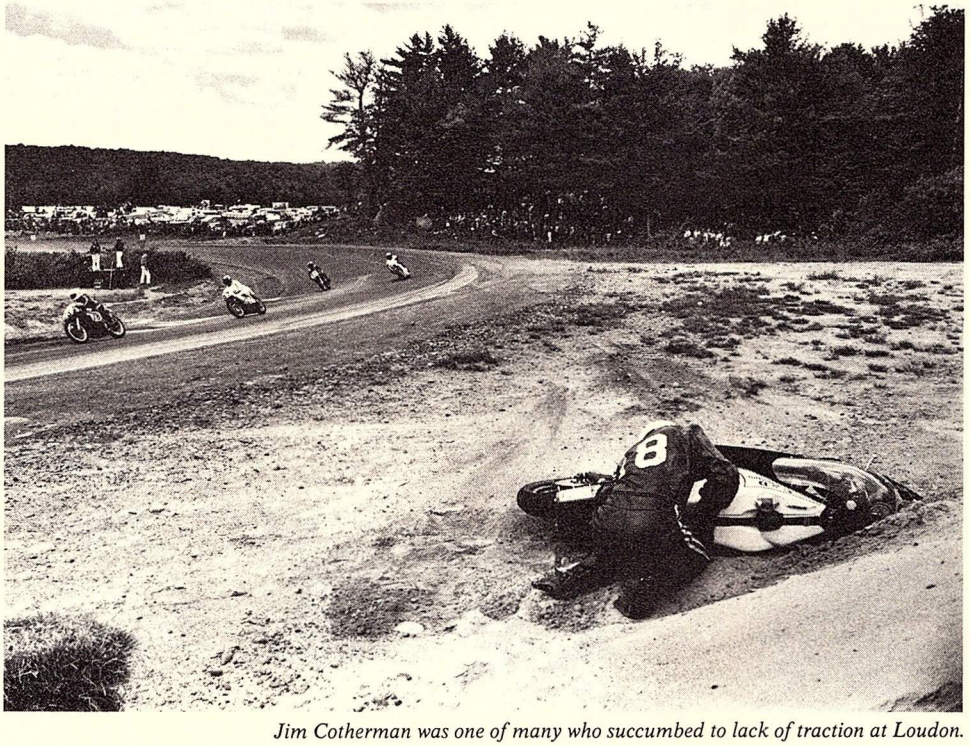
After a lot of post-race back slapping, Gary and his dad removed the fancy custom seat, fairing, and gas tank from the 250 and put them on the new 350.

On Sunday morning, Jimmy Chen lead the Junior race for the first 10 laps on his bellowing Honda Four. It was an incredible sight; Chen was wrestling the big bike furiously. Then Jim Evans came smoothly from the pack to take the lead permanently, but narrowly. Howard Lynggard forced his way past Chen, only to crash from the effort. Evans won smoothly, Chen voraciously clung to second, and Jess March broke his crashing streak to show third at the flag.

Fisher was a little nervous on the line for the National. Rayborn had gone two sec-



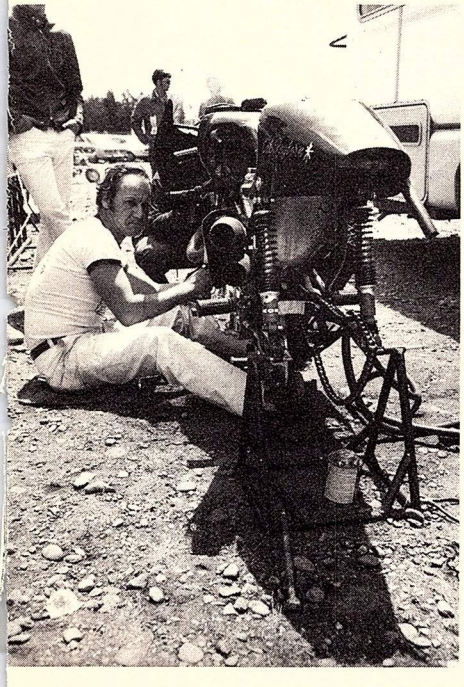
Jim Evans finally shook off the gremlins to win the Junior race.



Jim Cotherman was one of many who succumbed to lack of traction at Loudon.

Officials do their sweep-the-track dance as Carruthers and Howard Lynggard supervise. (Far Right) Carroll Resweber, said to be the most talented U.S. racer of all time, returns to racing as Cal Rayborn's tuner for H-D factory.

After Rayborn's engine soured in the National, Fisher left the pack to thrash among themselves.



onds a lap faster to win his heat than Fisher had. Sure enough, Rayborn split at the start, and led for two laps before his engine got a charley horse. After that, it was Fisher's race all the way. DuHamel's Kawasaki held second for a while, then stopped. Mark Brelsford took second on his new H-D and Gene Romero continued his brilliant road racing season with a fine third place.

Fisher's ride wasn't easy: he was charging awfully hard all the way. But he was consistent and smooth and sure. Many of the seasoned Experts had complained in the past that they didn't like racing with Gary because Fisher was unpredictable, and therefore dangerous. Though they wisely retain a wait-and-see attitude, several of those veterans offered Fisher personal congratulations after the race. Gary took the praise soberly: he knows those seasoned pros don't waste kind words on anyone, especially desperate young wobblers.

Greatness has been a long time coming for Gary Fisher. Some said he was great back when he was a local scrambles hero, around home in Parkesburg, Pennsylvania. Then, when he was 18 and at the top of the local pile, Gary got his AMA Novice professional license and the criteria changed.

Gary's father is Ed Fisher, who is and was an abnormally diverse character. For years Ed has been the Triumph dealer in Parkesburg. To promote his shop locally, and feed his rat, he built and campaigned some of the fastest drag racers in the country. Then he was a top professional road racer, before semi-retiring into sportsman (amateur) road racing. Now Ed Fisher has Datsun, Honda, and Triumph agencies in Parkesburg.

Ed Fisher thinks Gary is great, but for very fatherly reasons. He could have bought his son the fastest, most competitive bikes available to start with as a Novice. Instead, he rebuilt his own old Triumph Cubs. He wanted Gary to learn how to race, not to be

(Continued on page 52)

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CIRCLE NO. 27 ON READER SERVICE PAGE

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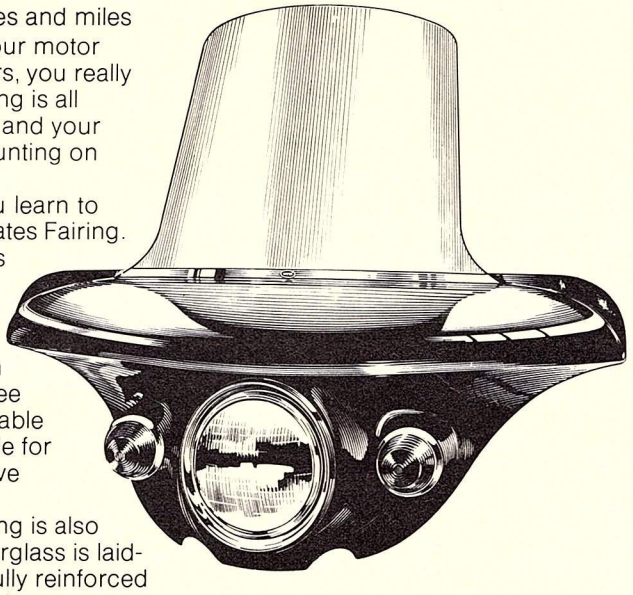

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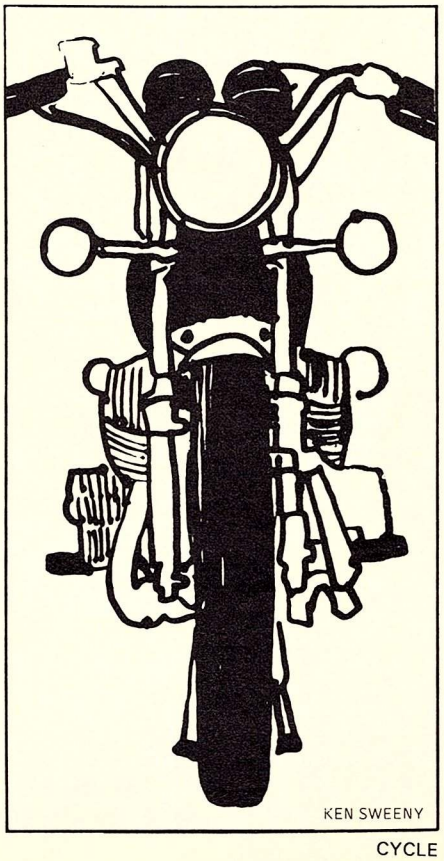
LOUDON *Continued from page 49*

some kind of Novice-champion father fulfiller. Gary raced hard on those Cubs, and earned his Junior license easily in the first year.

As a Junior, Fisher began using bigbikes to race with, but the getting-there didn't get any easier. Gary Nixon and Dick Bender scrounged enough pieces to build a Triumph three-cylinder road racer. The bike was fairly fast, but it had a rather limber dirt track frame and a four speed gearbox. And marginal brakes. With this hybrid, Fisher went out to do battle with the quick and desperate Rusty Bradley. Bradley had one of the few Kawasaki production racers built in 1970. Fisher took second place all year. But he won a lot of dirt track races.

As a first-year Expert, Gary got off to a good start by leading Mike Hailwood and the like for a few laps at Daytona, before Krause's Honda expired. It was the same all year in the big class, but he placed well in some of the lightweight races, some said by scaring the Experts so badly that they backed off to avoid the debris. Then Gary broke his back in a dirt track crash at Columbus. Lying there in the hospital, Gary had a long time to think about riding too close to the edge. A month later he won a mile dirt track race in Sedalia, Missouri. He has been getting less rough since.

Guys like Carruthers say that it is still too early to tell so far as any greatness rating for Gary Fisher goes. From what I saw at Loudon, I'd say that the crosshairs are on the target and Gary's finger is on the trigger. ◉



KEN SWEENY

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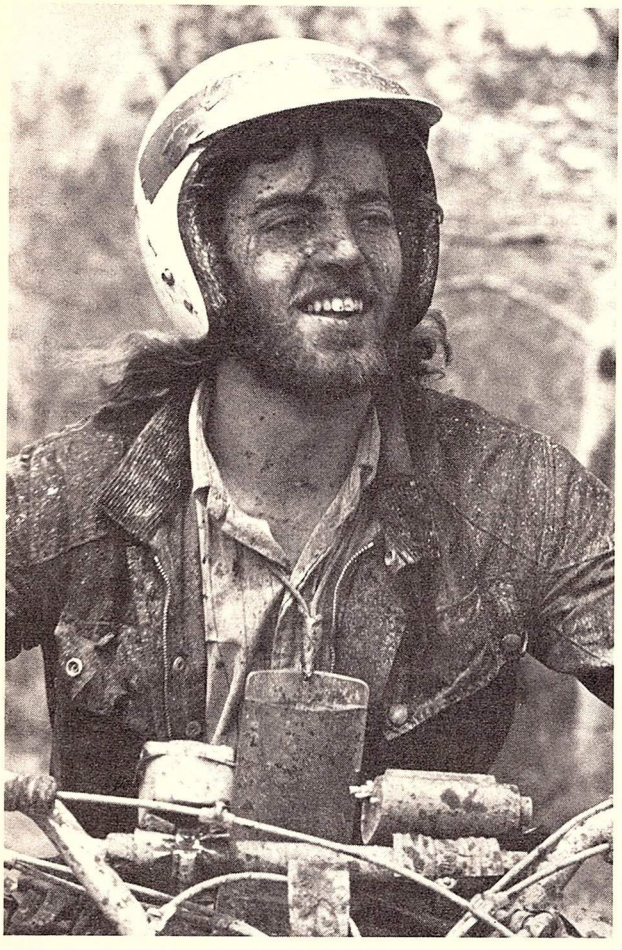
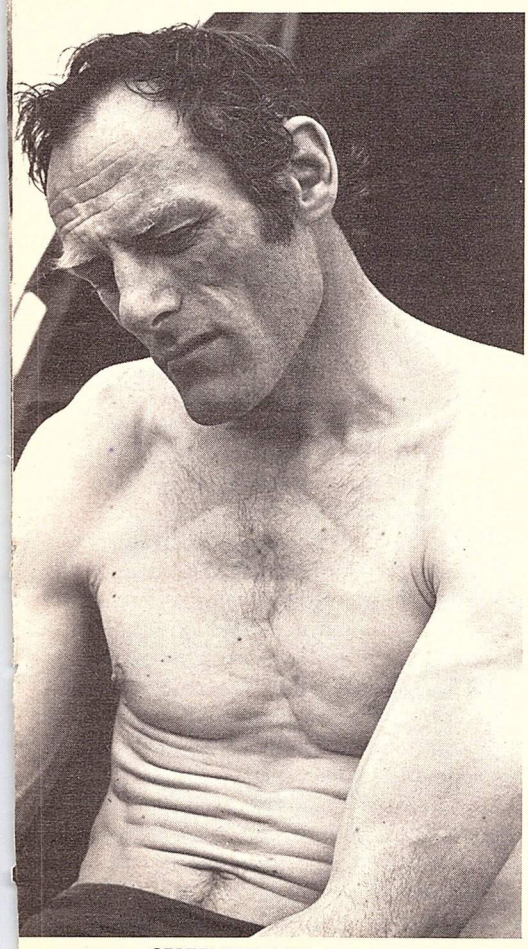


Prelude To ISDT In USA: Berkshire Trial

BY JESS THOMAS



The Berkshire Trial is a sort of super endurance run. Normal endurance runs, called enduros by *aficionados*, are events routed over rugged natural terrain to provide varied challenges to the riders' ability. The competitors leave the start, often four simultaneously, at predetermined and recorded one-minute intervals. Day-glo colored arrows are nailed to trees and posts to mark the route for the riders. Each rider is given a route sheet which coordinates odometer readings and the turns designated by the arrows. By checking the route sheet against the arrows, a rider won't normally stray off the course.

The object in an enduro is to hit (as closely as possible) the average speed determined by the organizing club. Riders of different ability levels ride the course to determine a speed that can be matched easily by average riders without violating any of the local traffic ordinances. Since part of an enduro route almost invariably contains short sections of public road, all motorcycles entered in an event must be street-legal, licensed and insured. All competitors carry a time card with them. Check points, both known and secret, are placed at intervals along the route; as a rider arrives at a checkpoint, his card is marked with his arrival time. He is given a number of penalty points for arriving behind schedule and double those points for being early. Thus, the rider with the lowest score in each class is the winner. Classes are divided according to engine displacement and rider ability. Less experienced riders earn points for placing in events throughout the year. As soon as a rider accumulates a prescribed number of points, he is placed in a more select category so that he can measure his ability against that of the resident experts.

This type of event is fairly unique. The competition is more between the terrain and the man/machine than between riders. Rider fatigue, due to poor physical condition, and bike failure share about equally in causing riders to fall among the non-finishers.

* * *

The Berkshire Trial is the premier event of its type in the United States. This year, 312 riders entered the event which runs over the torturous Berkshire Mountains for three days and 500 miles.

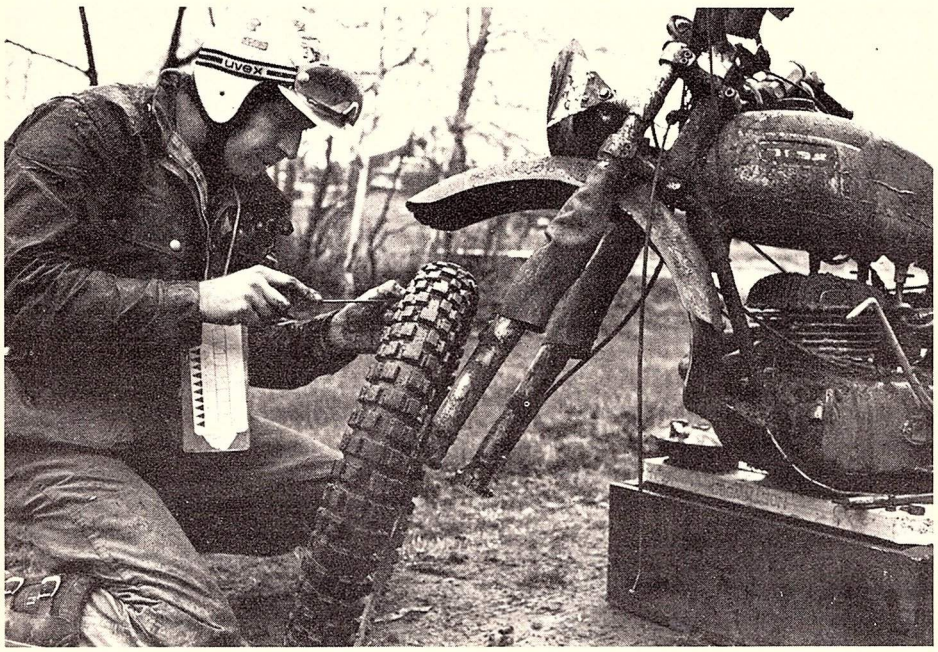
The word *trial* is accurate in the literal sense when describing an event of this type, but confusion often arises in the minds of cyclists when they hear a long distance endurance event described as a trial. The confusion, as usual, is caused by the British. Sometime back between the wars, they created a rough and woolly event called Observed Trials. In this sport, several closed, controlled and observed sections of incredibly difficult passage were linked by sections of open trails of perhaps 30 miles interval. When a participant began one of the controlled sections, the observers would watch with excruciating care, score sheets in hand. Points were docked each time a foot touched the ground, forward motion of the bike ceased, or the engine stalled. Riders had to stay within boundries of twine or ribbon, or more points were lost. The entire route had to be lapped several times by each rider, and things were further complicated by the fact that a time limit was imposed which permitted a little dalliance only to the top experts.

When the sport came to this country, the long interval sections and time limits were dropped and the event took on a less than dashing image. The name was changed to English Trials, and its popularity was never very great at all.

The word *trial* in the Berkshire sense has come to mean an event like those held in continental Europe. The International Six Days Trial (ISDT) is the ultimate event of this sort. Each year a different FIM-member country hosts the Six Days. Representative teams from member countries of the FIM battle in this event for what amounts to the world series of trial riding. Last year, the American Motorcycle Association affiliated with the FIM and a token American team was hastily lashed together under the AMA banner. The 1972 United States team for the Six Days in Czechoslovakia has been largely selected from last year's team and other recognized top-calibre riders. The 1973 ISDT will be held in this country, and members of our team will be selected from their performance in the Berkshire and similar events.

The birth and phenomenal development of the Berkshire Trial has grown out of the desire, enthusiasm and ability of one man: Alan Eames, who lives quite a full life in Pittsfield, Massachusetts. Al and his family have lived in the area all their lives, and he has been riding enduros more years than he cares to count.

In 1965, club apathy in the New England area had shortened the average enduro length from 150 or 200 miles to a mere 50 miles. Eames was accustomed to riding 180 miles on private Sunday jaunts with a few friends. Their group, along with others scattered around the country, were appalled by the general low level of rider ability developed by the short, easy runs. Stories from Americans who had seen the stamina and training required to be competitive in the ISDT made Eames realize that American riders would never make the grade the way things were. Eames considered many forms of events, including a 12-hour marathon, be-



From the cowpen impound area, the cream of U.S. trail riders were allowed to work on their bikes for twenty minutes each morning before starting out on the toughest, muddiest, most grueling trail ride of them all. Any tools and spare parts used during the event must be carried by the rider on his bike.

fore deciding to build an event patterned after the ISDT.

Al Eames knew many of the farmers, loggers, and residents who populate the Berkshires. Those he didn't know, he met in a methodical, chain-reaction fashion. He carefully explained trailriding, and he talked about his dream event with each new neighbor. A storehouse of confidence grew with each cup of coffee shared at a different Berkshire kitchen table.

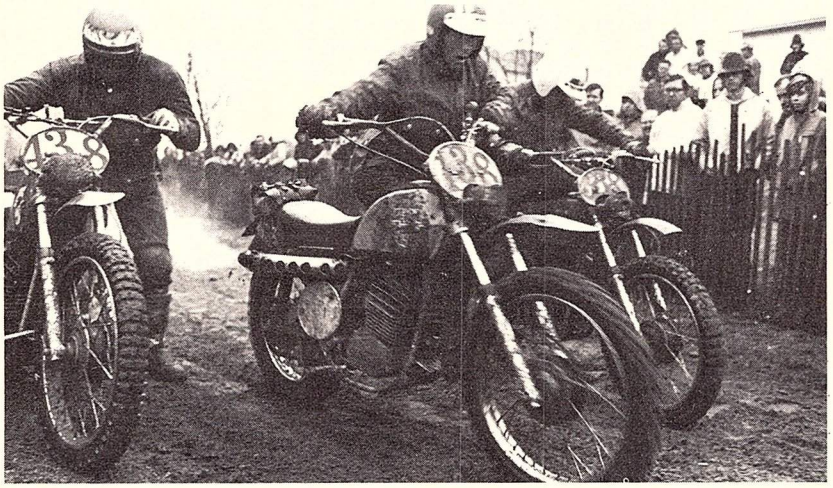
Eames good-naturedly speaks of suffering through the growth of the Berkshire. That first running in 1965 was a one-day event that covered 170 miles on a hot Sunday in June. The combination of the heat and the fact that the 70-entry field was accustomed to much shorter runs allowed only 18 riders to finish. The course had been too tough, but it had thoroughly whetted the appetite of many of the riders.

I was one of the 114 riders who signed up for the second Berkshire in 1966. It was to have been a two-day event, covering 180 miles each day, with special test sections thrown in. As in the ISDT, the special-test bonus points serve as tie-breakers among the riders who finish with the same checkpoint scores. There are two of the special sections: a three-mile timed hillclimb and an acceleration/braking test.

A combination of circumstances had prepared me particularly well for the event. I was working for John Taylor, then the Bultaco importer, at the time. Though none of us who worked for Taylor were serious enduro riders, we were in good shape. As part of the Matador development program, we would ride from early morning until after dark at least once a week, and often several times. These test rides always quickly degenerated into day-long races wherein we always rode flat-out—always. A three-crash day was just normal. And it was devil-take-the-hindmost: the guy who suffered mechanical problems had to fend for himself. Pride soon made preparation experts of us all.

John Taylor is a many-faceted fanatic, and mechanical exotica is one of his charming, consuming preoccupations. For the 1966 Berkshire, Taylor bought a $1600 Jawa Factory Banana-Framed ISDT 360cc which

PHOTOS: MARCO VEGA



One minute is allowed for the riders to start their cold machines. After that, penalties are added to the bonus points. At each checkpoint, the time cards are imprinted with a clock. After a quick sip wets a guy's mouth, he's on his way.

When an unfortunate soul loses control and his bike's momentum fades, the price is fatigue.

Colorful New England characters literally came out of the woods to do the drudge work in the rain.

"What do you expect me to do, turn the hour-glass upside down?"

Fatigue envelops the weary like a viscous, opaque, deadening fog.

I was to ride. All in the interest of technical research, of course. Well, the kickstarter sheared off the first time we started the bike on the afternoon we were to leave for the event. I worked most of the evening repairing the Jawa, and we rolled into a Berkshire motel at 2:30 a.m.

I wasn't looking and feeling my normal Banzai attitude. Though I was fatigued, my trailriding reactions were natural and automatic. What developed from those conditions was what I later recognized as a perfect pace for this kind of run: about eight-tenths as fast as I could possibly ride. Under the ISDT rules which the Berkshire has also adopted, riders are not docked points for arriving at the checkpoints ahead of their schedule, only for being late. My fatigue-enforced pace got me to the checks a few minutes early, so that I always had time to tighten the spokes and adjust/lube the chain. I slowly became aware that riding any harder than necessary only threatened the reliability of my bike and increased the likelihood of a crash.

Fifty of us survived the first day, and I was among the twenty with perfect scores. As I turned in my score card, it began to rain hard. Al Eames had gambled that any rain would be slight, since the land that he had secured permission to use was very prone to becoming bottomless in heavy rains. It was torrential all night. Rather than risk a catastrophe, Eames cancelled the second day. Fifteen of us who had sufficient bonus points grinned like idiots with our half-earned gold medals.

Till this year I hadn't entered any organized endurance events, but all of the Real Enduro Lions I know had said that the

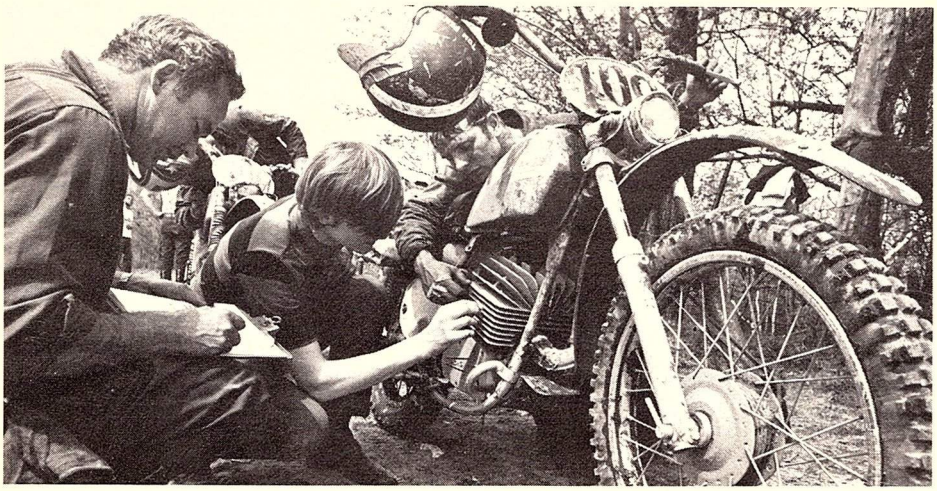
The trails are unrelenting and vicious; the worst thing you can do is get behind a 400 Husky.

Jack Penton picked the wrong path this time, but regained control without crashing.

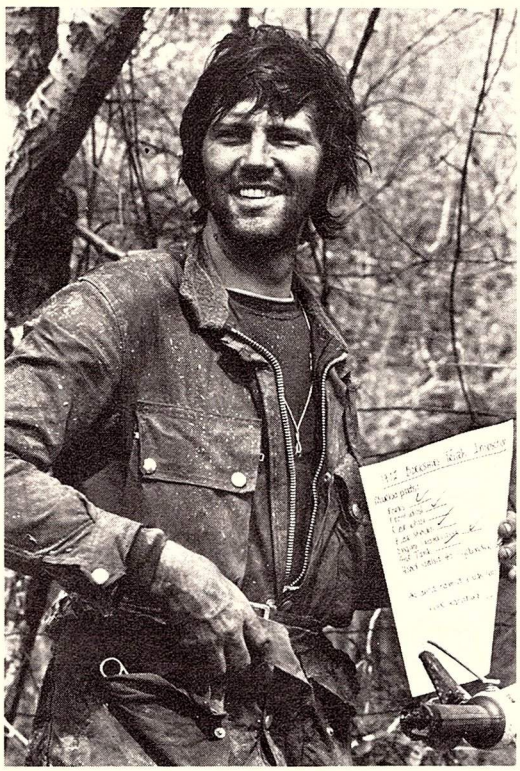
PHOTO: JAMES CHEN

Frantic repairs on the trail.

Some riders are still charging at the last check.



The seals must be intact or he's out.



A clean final tech sheet symbolizes having successfully survived three days of incredibly rigid self-discipline, extraordinary physical demands, and agonizing mechanical frailties. Those who are able and fortunate and have adequate bikes will represent us at the 1973 ISDT.

Berkshire has become flawlessly organized. I decided to find out what it was all about by entering again.

* * *

A phone call to Marie Eames secured a special press entry. Actually, all entrants were supposed to have earned advanced ratings by placing well in regular enduros. The tremendous increase in the number of good riders in the past few years has forced the exclusion of all novices. And still the entry list has to be limited to just about 300 to remain manageable.

John Penton was eager to loan me one of his 125cc ISDT six-speeders for the event. It had been a couple of years since *Cycle* had tested the model, and Penton said that his continuing development had made the bike a lot better. Certainly no one could argue his point on the basis of record: Pentons have virtually dominated the 125cc class in enduros for the past two years.

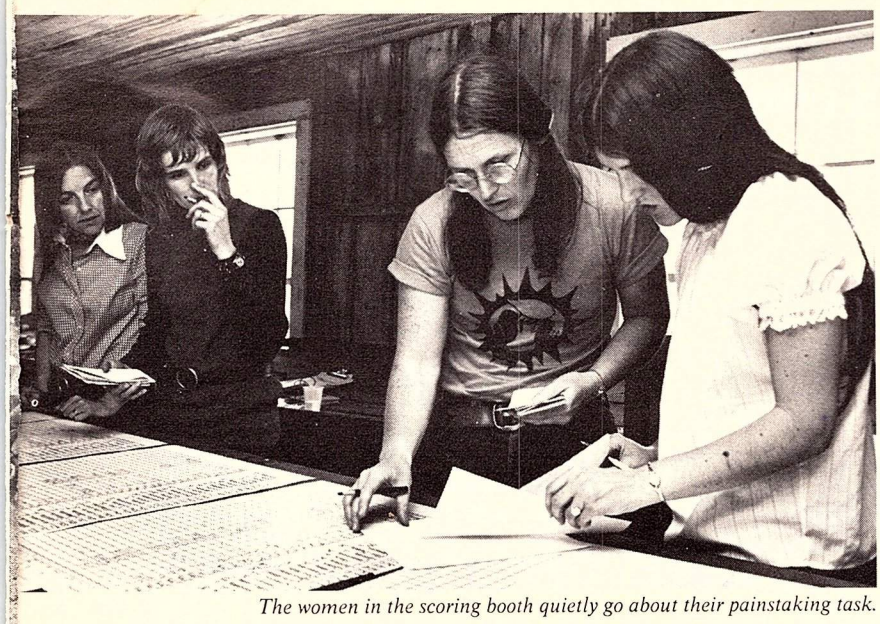
Headquarters for the Berkshire Trial were located in the Middlefield, Massachusetts Fairgrounds. Ever-narrowing, serpentine backroads lead some 20 miles up into the hills from Pittsfield to Middlefield. I turned east at the only gas station (also the general store) in the middle of Middlefield. The fairgrounds were a stone's throw up the road. It was Thursday, May 18, the day before the event started—a day reserved for sign-in and inspection, sealing and impounding of the competing bikes.

International trials rules provide that the wheels, forks, fuel tank, and engine must not be replaced during the event. The engine and fork-mounting bolts are sealed with a special paint and the cylinder head and cylinder are joined with a wire-and-lead seal. The wheels may be removed to repair punctures. Spot checks along the route each day prevent wheel substitution. If any of the seals are broken or missing, the rider faces disqualification.

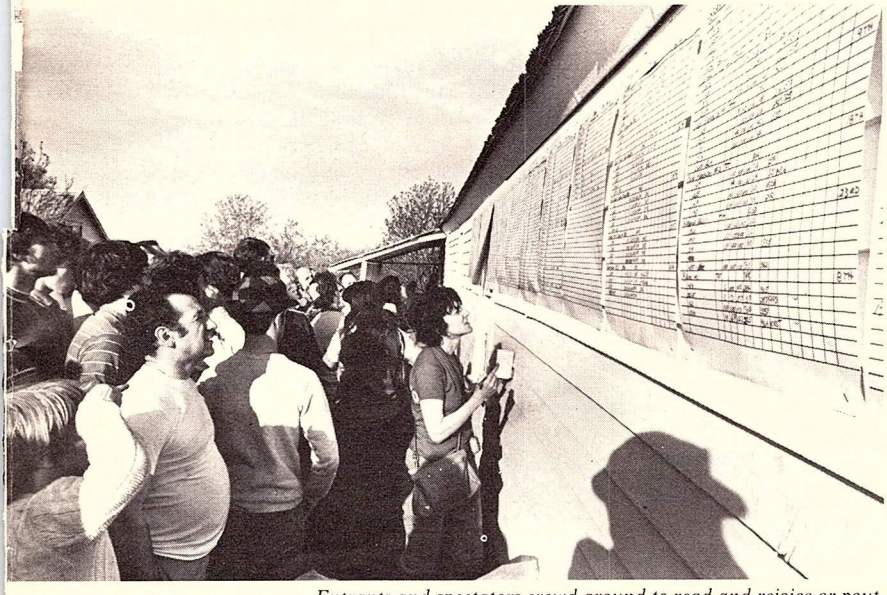
All repairs on the machines must be performed by the riders, and they are only permitted to use the tools and spare parts that they carry with them during the event. Marshals who enforce the rules patrol the route constantly.

Upon signing-in, I was given a packet which contained my riding number, the first day's route sheet, a topographical map with each day's separate route indicated in a different color, my first day's score card in a plastic envelope, and an illustrated booklet which explained the procedures of the three-day event. My adhesive-backed number, for the plate on the front of my bike, was 222. That meant that I was the number-two man

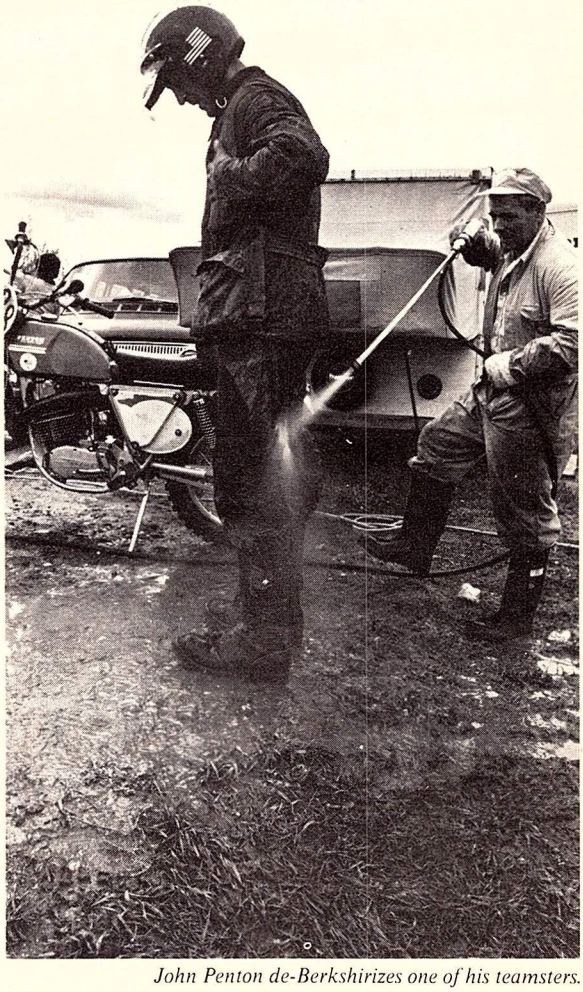
(Continued on page 76)



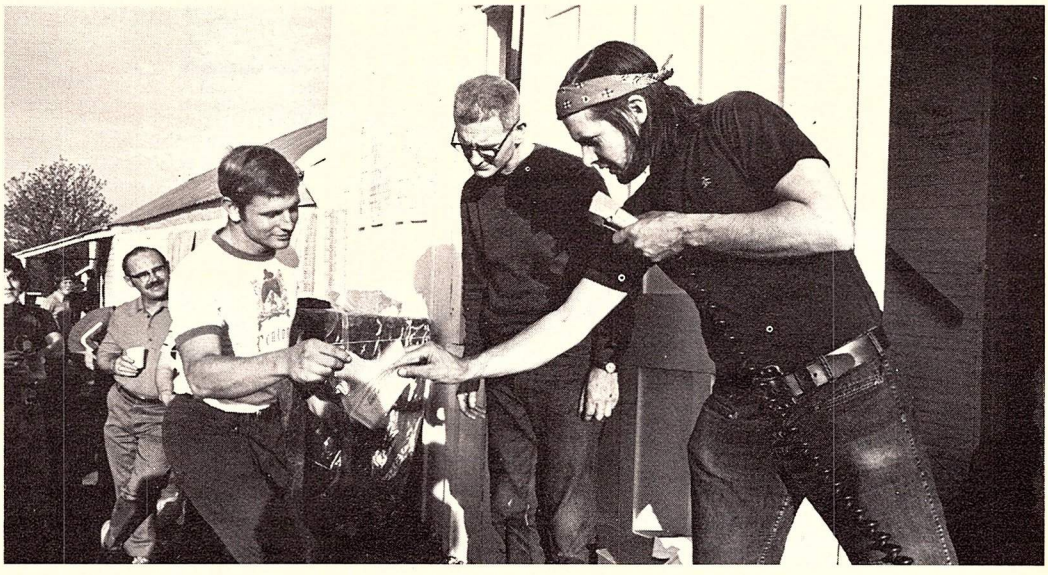
The women in the scoring booth quietly go about their painstaking task.



Entrants and spectators crowd around to read and rejoice or pout.



John Penton de-Berkshirizes one of his teamsters.



Bob Hicks, (with Mike) and Al Eames present Tom Penton with his Gold Medal certificate. The Penton Team absolutely dominated the Berkshire Trial.

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YAMAHA *Continued from page 33*

lines. They're both wrong. If the manufacturers feel a dirty rear wheel constitutes a solid threat to sales, they should fully enclose the rear chain, *not* do away with the chain oiler.

The Yamaha XS-2's handling traits range from superior on the freeways to good in the mountains. The rear shocks (new for this year) work best set in the middle of three available positions. This year's 650 also wears new front forks and new triple-clamps. The suspension changes have been made in the interest of getting a better handling machine. The old Yamaha 650s (XS-1 and XS-1B), when pressed hard down a twisty highway, fed the rider little signs which suggested that the bike might sling the rider down fairly quickly and without a great deal of foreplay. Instinct told you not to push any harder, or you'd risk taking a tough bounce with the old Yamaha 650. Riding hard wasn't much fun either, thanks to the engine vibes. Working hard, the old 650 shook, and the shaking took the fun out of going quickly.

The cornering speed of the new XS-2 is limited only by footpeg height on the right side and the sidestand and the centerstand tang on the left, both of which drag well before the tires start to slip. Fork action is adequate: firm enough for courageous mountain-charging, but not so harsh as to wear you out over the longer, quieter hauls.

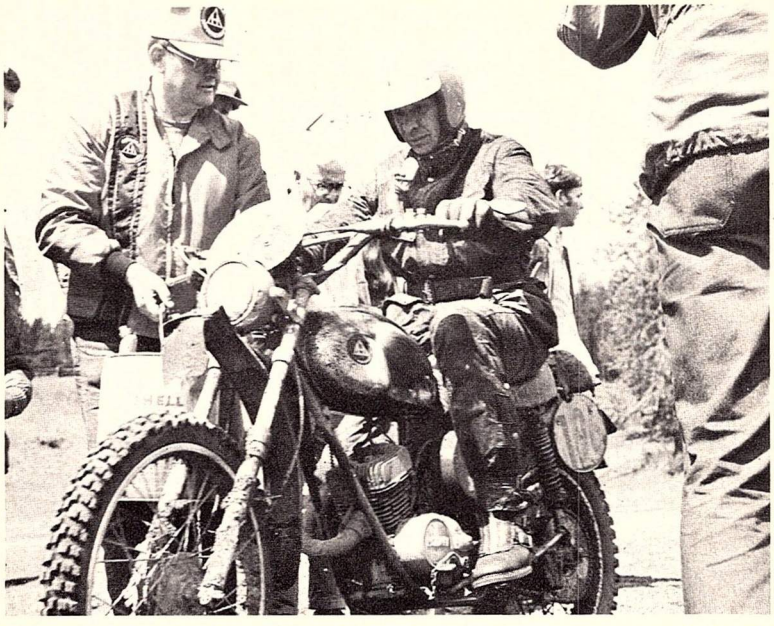
Our impression was that the XS was over-geared. With a reasonably fresh tune, the bike will barely pull past 6000 in fifth gear (with the rider sitting up), or just over 100 mph (indicated). The red-line, though, is smack on 7500—which makes you suspect that the factory engineers have attempted to minimize the vibration through overgearing. Make an engine work against a huge load and the vibes die off; keep engine speed down and the frequency stays under control.

But not *enough* under control, as we have said, to permit the Yamaha to be a serious, comfortable long-hauler. What, then, is it? Who is it made for? Lots and lots of people. Anyone who is in the process of moving from a 350cc or a 500cc motorcycle up to a multi, and wants to savor the best readily-available and mass-produced 650 in the world (and who enjoys being able to buy a part or two, from his *local* dealer, when the spirit, or necessity, moves him); anyone who enjoys the definitively old-motorcycle-y sound of a big vertical twin; anyone who wants to get rolling with a large-displacement motorcycle without sinking up to his eyeballs in debt; anyone who wants eye-catching styling and paintwork; anyone who hates to see his floors defiled by glops of oil.

The motorcycle vibrates: all vertical twin 650s vibrate. But unlike most of them, the Yamaha XS-Z 650 tries to make up for it in a multitude of ways. And beyond that, for $1399 it just has to be one of the best buys in all of motorcycling. ◉

What is the secret formula for making Hodaka the motorcycle that lasts longer?

Is it because quality craftsmanship and built-in durability give this planned-ahead machine escape from common obsolescence?



Part of our Hodaka Research and Development Team at a mountain check point in the 400 mile, 2-day Bad Rock Trial out of Weston, Oregon. We're constantly involved because we're constantly perfecting Hodaka for you.

Hodakas are designed in a little Oregon town that's nestled up against the Blue Mountains. It could be rural anywhere. Life is unhurried in Athena. That's probably why Hodaka's that way.

There's plenty of time to concentrate on designing an excellent motorcycle . . . to plan ahead so it won't be obsolete in six months and to engineer it so new parts fit old Hodakas. Nearly 100,000 Hodakas have been handmade over the last nine years and we can make everyone of them run today. We're as proud of our old Hodakas as we are of our new ones.

A motorcycle is an investment, and Hodaka costs a little more than some others of equal displacement. But a knowledgeable buyer expects that of a quality, hand-crafted machine. Unlike a car . . . it's easier to see what you get for your money.

Take a good long look at Hodaka and see what we mean by hand craftsmanship. This is not a mass-produced, stamped out, assembly line "quickie". It's a "planned ahead", handmade, quality motorcycle. And in Cycle magazine's recent readers' survey, we discover that Hodaka out-sold every European model on the market.

Hodaka's made with durable materials. All the way from the stainless steel fenders to the deep, dark confines of one of motorcyclings strongest 5-speed transmissions. And as for the Hodaka piston port, 2-stroke engine, history itself is the proof of its performance. The word "Hodakability" was founded on its reputation!

Hodaka owners come in all sizes. We planned for that by making Hodaka adjustable. For example, the footpegs adjust to fit foot length so that the shift lever isn't too close or too far away. No baloney stuff like removing your foot from the peg to make a shift or apply the brake. Try the seat. It's comfortable and long enough for tall riders. It'll give you a better disposition at the end of a long ride.

We don't forget you after you buy Hodaka. We, and a long list of manufacturers offer more accessories to fit Hodaka than any other model. Once you register your Hodaka with us, we'll send you information about new accessories, technical improvements, tuning technique and any information we can . . . adding to the years of pleasure you'll get riding Hodaka.

Hodaka has tens of thousands of salesmen all over this continent. They ride Hodakas. Talk to one of them and realize the conviction they hold for this motorcycle.

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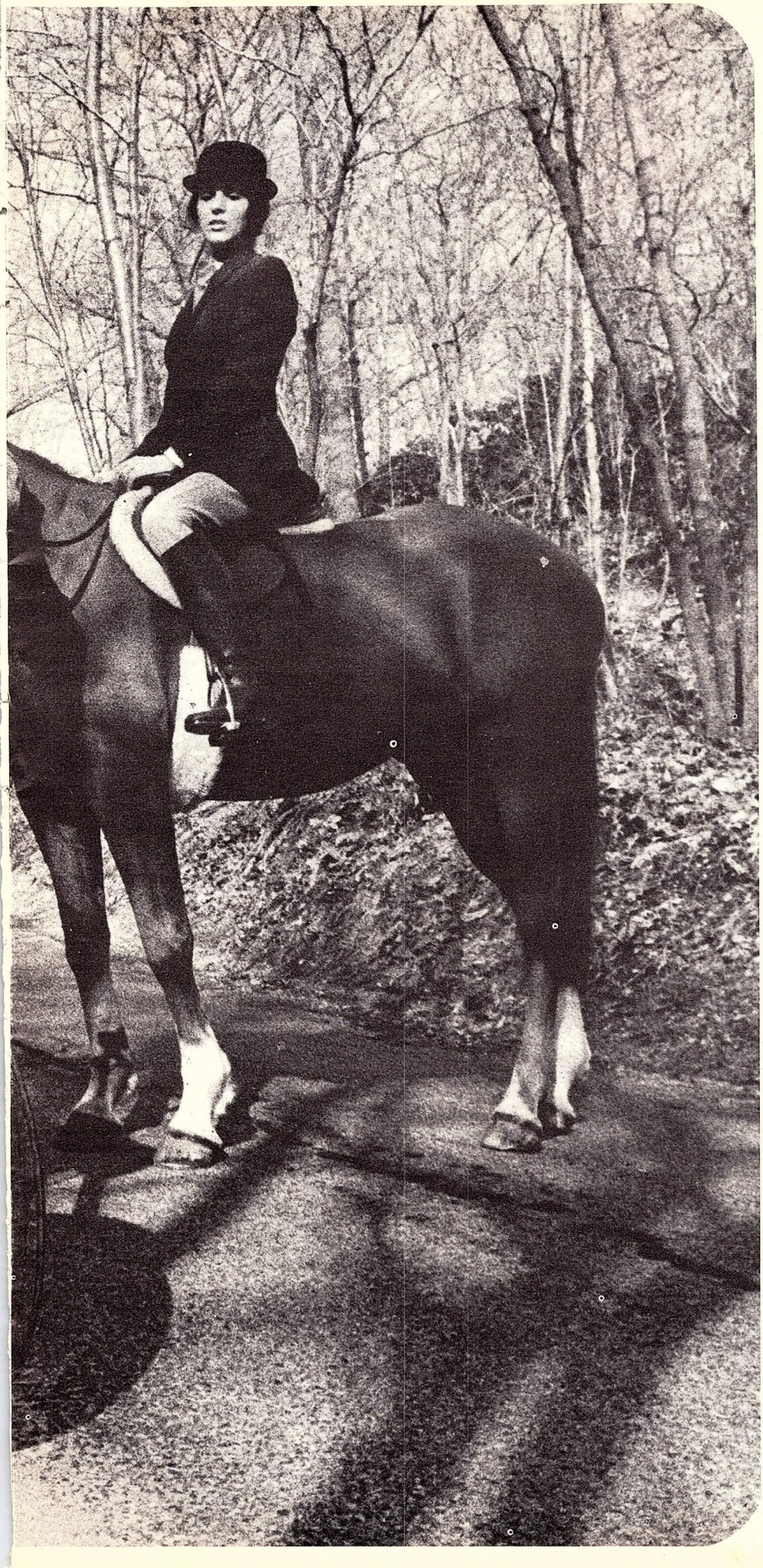


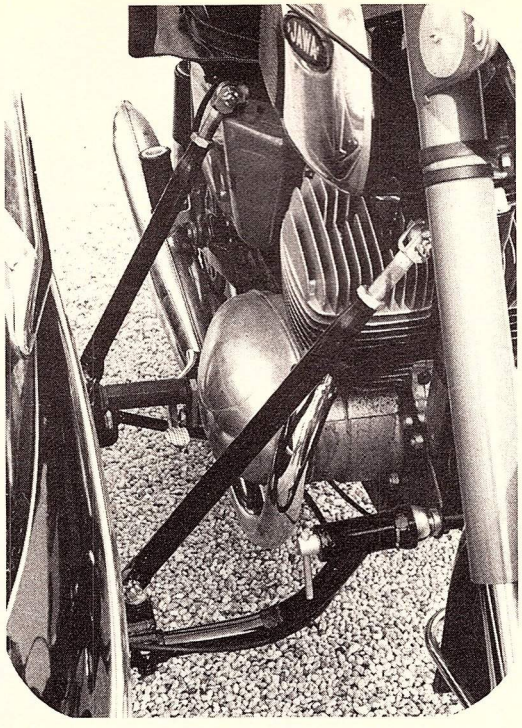
THE SIDECAR EXPERIENCE

Bolt on a sidecar and what you have is altogether different from a motorcycle.

Beyond an unspeakable desire to press against, and through, perimeters of behavior defined and established by their parents, nothing motivates ankle-biters more relentlessly than the Territorial Imperative and the lust for possessions. Yank yourself back to the days when you were, say, ten, and just starting to break loose. Remember wanting your own tree house? Remember wanting your own toys, and remember how you felt when some other kid played with them? Remember looking for some secret place that nobody but you knew about? Remember wanting to sit in the front seat of the car, up there where the action was, up where you could see what you were doing and see where you were going? Did your folks ever reward you by letting you sit between them in the front, radio controls and heater knobs at nose-level; or, for some unmitigated crime against nature, be banished to the back seat, solitary, brooding, and stripped of *your* knobs and *your* dials?

A sidecar—attached like a pilotfish to the side of a nice, noisy motorcycle—your *own* sidecar, your *own* place, a place with room enough for just you (or maybe you and a lucky friend, once in a great while), loaded with lots of dark, secret places and pouches to put stuff in, your very own grab-handle, your very own windshield, your very own seat, your very own wheel; maybe, if you're

JAWA



PHOTOGRAPHY: DOUGLAS MESNEY
RIDING APPAREL BY MILLER'S/NEW YORK.

lucky, a sidecar with your very own name written on its side. Heaven on earth. If you're ten.

Not so bad, either, if you're a little older than that, and don't like to do the driving (or riding). Certainly you've been a passenger on the back of a motorcycle. Remember what it's like? In the first place, you have no idea of where it is that you're going; looking around to the side is hard on the neck muscles, and looking at the wrinkles between the bottom of the helmet and the top of the jacket of your pilot is unrewarding and dull. And in the second place, on most motorcycles, the position is physically uncomfortable. You pay the price, just like the guy behind the handlebars, of whatever vibration is transmitted through the pegs and the seat, but you miss out on the reward of control; worse, your knees stick out, and you feel like the view that you present behind you is all hunchback, thighs, and hiney. The sidecar, for the passenger alone, is a better deal, under certain circumstances. But its effect on the motorcycle is a matter altogether different, and the conclusion that clamping a sidecar to a motorcycle without some extraordinary precautions could be dangerous is a conclusion which, after a few days, becomes inescapable.

The rig we tested was a Velorex model 560, one of very few (if any) that can come from the distributor already lashed to a motorcycle—in this case a Jawa 350 Californian. A few words about the motorcycle: were we inclined to be charitable and kind, the words would be utilitarian, rugged, strangely fee from vibration, serviceable, easy to start, and pleasing to the eye in a reminiscent sort of way. Were we inclined to be brutally frank, we would mention that the motorcycle leaked oil around the oil-tank inspection window, out of the center crankcase seam, and out of the oil filler hole; we would note that gas leaks out around the fuel tank fitting, that the tank itself is a bit overworked, what with black basic paint, a red stripe, a polished aluminum filler cap, a gold pinstripe, buffed side-panels, and a pair of red, white, and black badges; and that the paint on the box-section frame and swingarm gives every appearance of having been applied with a broom. We would, being frank, mention that the clutch-pull was extremely heavy (around 14 pounds), that the twin mufflers emitted too much noise and too much smoke, that the brakes were next to unserviceable, that the hand-grips were small and uncomfortable, and that the engine seized once during the test. But the motorcycle here is unimportant; what matters is the sidecar, what it's like to ride in, what the motorcycle feels like when one is attached, and what rather peculiar demands a sidecar makes.

The Velorex, molded in fiberglass, is 74 inches long, 58 inches wide, 45 inches high, and weighs 154 pounds; it is attached to its sub-assembly via rubber torsion blocks, two in front and two behind, and affords ample storage space behind the seat-back. The subframe is attached to the motorcycle with a long adjustable arm bolted to a clamp on the frame downtube just below the steering head; another adjustable arm clamping to the backbone under the seat; a tube and ball-socket attaching to an extension of the front engine-mount; and a tube clamping to the frame section beneath the engine. All fittings are adjustable, because alignment of the sidecar is most critical. The sidecar rides to the right of the motorcycle; when the rig is attached, the bike must be leaning three degrees to the left, and the sidecar wheel (a16-incher) must be aimed, not straight ahead, but a little to its left, or towards a line running down the middle of the motorcycle's tires. The reason for all this jiggery-pokery became evident the first time we fired it up and tried to make it go in a straight line.

Strangely enough, one's basic apprehension about dealing with a sidecar is groundless. A motorcycle (no sidecar attached) steers in a very distinctive way: put pressure forward on, say, the left handgrip, the front wheel steers right, and the motorcycle leans left, precipitating a turn to the left. But a motorcycle with a sidecar cannot lean (under ideal circumstances), and as a consequence steers like a car. Want to go left? Steer left. Because of the heaviness of the steering and the constant attention one must pay to keep headed in a straight line, you never forget; your mind never wanders and you never find yourself trying to handle it like a regular motorcycle.

The steering exercise is one bound to build muscles like Charles Atlas. Remember, the sidecar-rig steers like a car. Rake in the world of motorcycles corresponds to kingpin inclination in cars, or caster. Cars use caster to give the steering wheels enough trail so that they self-align; motorcycles the same. But cars don't use very much of it, because if they do, steering effort goes way up—the wheels are trying to self-align with a vengeance. Most cars get by with 7 to 10 degrees. But here's this motorcycle that steers like a car, only it has the normal amount of rake (or caster) that you'd find in a bike, and the normal amount of trail. So the steering is hard—very—and because of the sidecar, it is also imprecise, even at constant throttle openings. Sidewinds do not effect a motorcycle over-much, unless the winds are brutal. But under most circumstances a good-handling bike will lean into a sidewind and keep going in a straight line. Not a sidecar-motorcycle; again, it can't lean, and buffeting from other vehicles, and quite moderate sidewinds, conspired to move the Jawa-Velorex all over the road.

Any alteration in ground-speed does the same. Under acceleration (remember, the bike only has one driving wheel) the bike wants to pivot around the sidecar and to the right; any deceleration hooks it around to the left (although this condition would be eased by a brake on the sidecar wheel that performed in concert with the brakes on the motorcycle).

What it boils down to is simply that the whole apparatus was difficult to steer accurately and nearly impossible to keep from weaving all over the road, which tends to keep you on your toes, tends to keep you from relaxing, and tends to make you yearn for the lightness and responsiveness of a normal two-wheeler.

Corners; ah, corners. Another adventure. Lefts were pretty simple, fairly free from the heart-gallops, and relatively predictable; all you had to do was crank the handlebars to the left, lean to the left to make things easy on yourself, and watch (if you were so inclined) the forks distort and the front tire trying to crawl out from under the wheel. The right-handers—much more thrilling, as you would suspect, because the bike now has the ability to flat tip over. The sidecar wheel, as you may recall, is inclined toward the motorcycle's center-line; it steers, if you will, to the left. And the motorcycle was leaning to the right (3 degrees) when the sidecar was bolted on. Both adjustments are to simplify turns to the right, and both certainly do, but when you find yourself with the sidecar up in the air and the motorcycle tilted to the left going around a fast right-hander you wish somebody had thought of something else, something *more*.

Another characteristic sprung into the light of day: the rig handles considerably differently with a passenger in the sidecar than it does without. The weaving intensifies, as does the darting on acceleration and braking, but right-handers (because of the ballast) are easier.

You just have to wonder how those sidecar roadracing jockies manage to keep their three-wheeled rigs between the curbs. It all looks so neat, seeing those guys power around fast sweepers with the passenger's shoulder hanging down on the pavement—and his neck stuck out a country mile. That tricky driver-passenger ballet-work is enough to make your heart stop, and then run backwards. Sidecar racers probably come from the same sort of people who do lots of airplane wing-walking at 2000 feet. But just because artists like Siegfried Schauzu make super-fast traveling in sidecar rigs look easy and graceful, you shouldn't bet that you can do the same with your first sidecar apparatus, even in the privacy of your own driveway.

Initial reactions from sidecar passengers (all wracked with inexperience): "Hey, it's really kind of neat. The suspension works well, even if it makes a little noise, the seat's comfortable, there isn't any wind to contend with, and you sit down so *low* to the ground that you feel like you're going a lot faster than you really are. It's a little cramped for anyone over six feet tall, though, and the motorcycle seems to make a lot of noise."

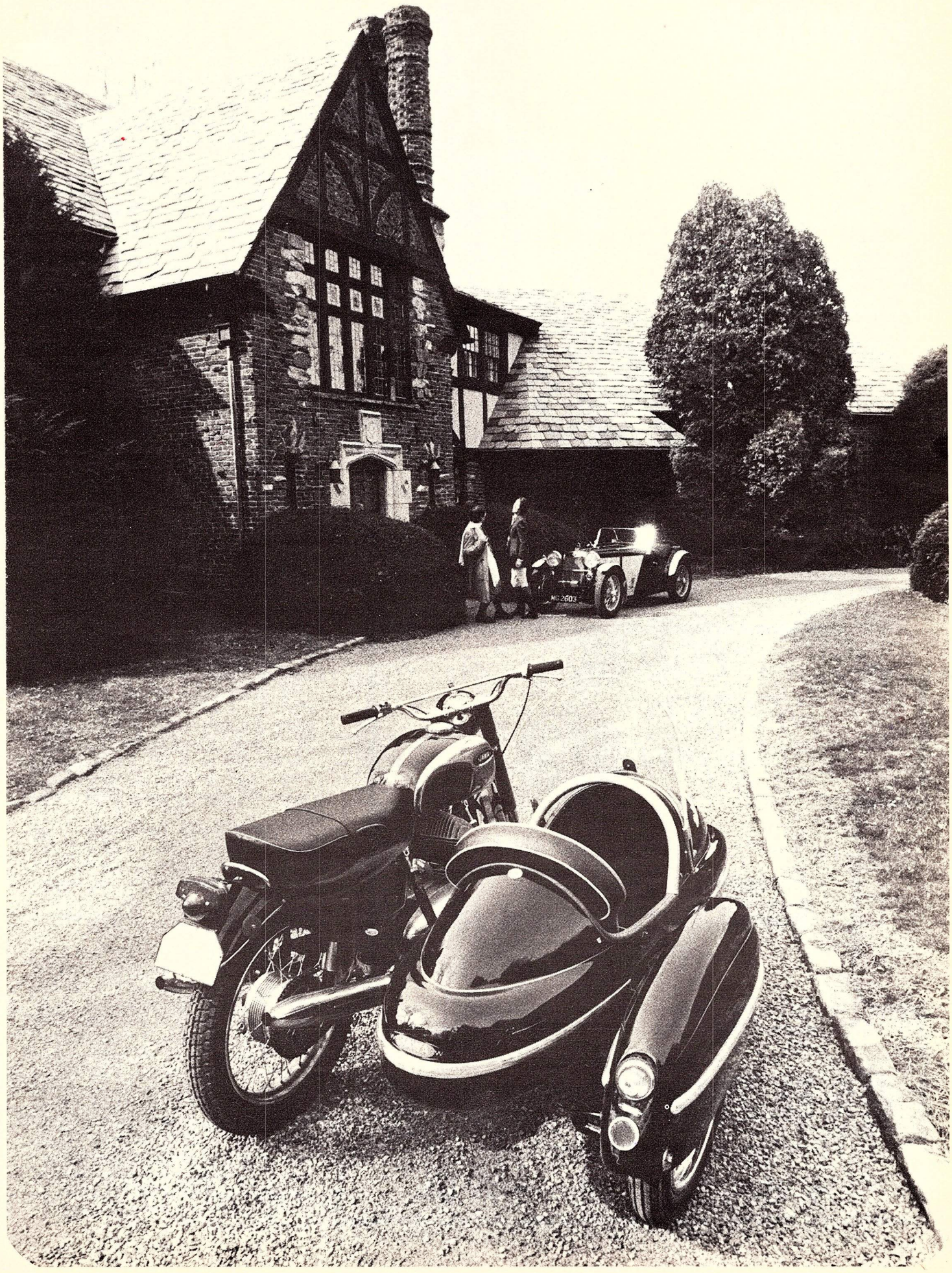
Other comments: "There are a lot of screws sticking out of the bodywork right into the passenger compartment; you could snag your knee or leg on one of them if you weren't careful."

And one observation: the sidecar was not the center of attention that you might suspect from either straight citizens or fellow motorcyclists, and the straights didn't seem to resent it nearly as much as they do a normal bike. Sidecar: how does it hit you? Does it rekindle memories of old war movies? Does it awaken thoughts of ancient girder-fork motorcycles with wicker chairs strapped to the side, motorcycles with tank-shifters and foot-clutches? Or remembrances of an era in Europe when motorcycles (as they still do) served not as recreational vehicles but as transportation, a role they have never developed in the United States? Or does the sidecar evoke thoughts of clubbiness and communication and remove motorcycling from the category of solitary sporting endeavor wherein in the United States it has grown rich, controversial, and vigorous?

Which leads to another quandary: is a motorcycle with a sidecar really a motorcycle at all? The rapturous communication between motorcycle and rider—completely lost with a sidecar; fingertip control—also gone; feelings of independence and maneuverability—never. Does that not make a motorcycle with a sidecar much more akin to a small convertible? The wind in your face is about the same, handling, if anything, is more remote with the sidecar, and you can't lean the thing around corners except accidentally, and then the wrong way.

Are sidecars, then, to be condemned? Absolutely not. Assuming that the sidecar is well-made, well-balanced, and has a brake that works well, and assuming that the motorcycle to which it is attached is strong enough and firm enough to cope with the sidecar's additional weight, and assuming that the individual who's planning on lashing one on is fully aware of the limitations, then it's neat.

Besides, a sidecar knocks little kids for a loop. It's their own place, their own domain, their own private realm of open-air, loud-noise transportation from which they can see where they're going. And that alone justifies sidecars, and the sidecar experience. ◉



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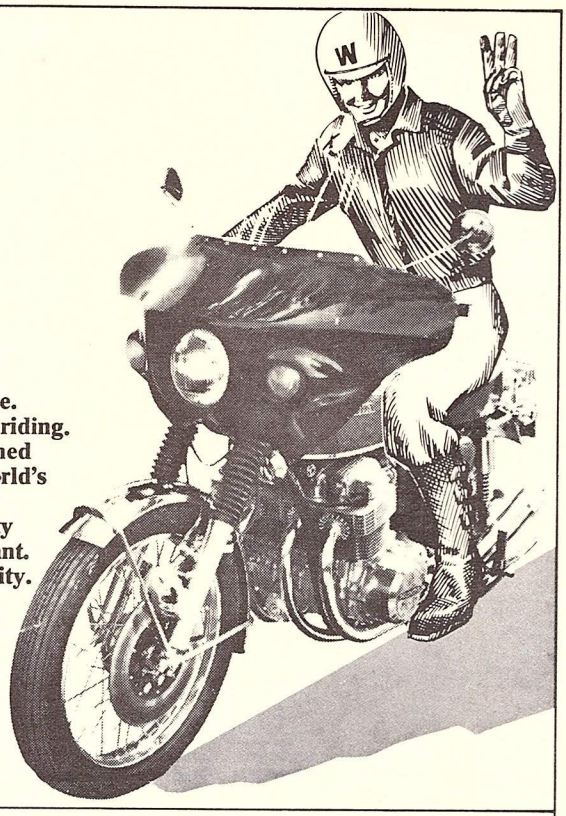

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HILLCLIMB *Continued from page 39*

uses the kill switch ("buttons" it) to shut off the engine just long enough to regain control of the motorcycle. If he buttons it just a trifle too long, he'll lose his momentum. His riding ability depends largely upon his sensitivity with the kill switch.

Roger Kaler elaborates: "Doyle Disbennett—this year's Formula A champion—is the best there ever was. I've seen him touch the front wheel on the ground for a total of 10 feet on a 400-foot hill. If the front end gets too high, he'll button it down where he wants it—doesn't even have to put it back down on the ground."

Two of the outstanding riders—Earl Bowlby and Carl Wickstrand—have learned how to hold on *and* use the twist-grip instead of the kill switch. Carl says, "I practice for this by doing a hell of a lot of high-speed woods-riding with a TR-6. It's a big motorcycle for the woods—you gotta hang on to it—and I push myself as hard as I can on that bike to build up the timing and coordination I need here."

As more riders begin using the hotter fuel blends with higher percentages of nitromethane, they will probably have to find an alternative to the "button" riding style. Nitro causes no problems—unless you flood the engine when you're using it. Then it blows up. If you're running with the throttle wide open, the engine gulps a quart of fuel in ten seconds, so there's a *lot* of fuel flowing. In buttoning the engine, if you shut off the ignition for too long you'll flood the engine with fuel. The next time the sparkplug fires, BLOP! One engine down the drain.

Most of the riders pay little attention to their front forks, except to build them as light as possible. For example, Beese Wendt says that his forks only have a couple of inches of travel. "They wobble around some, but then, you're not putting that much weight on the front end of the bike."

Many riders use a ribbed street tire up front. Carl Wickstrand mounts a knobby tire in Ceriani lightweight roadracing forks. "I'm a woods rider, so I use a knob. When the front wheel *does* come down, well, these are dirt hills, so I don't want to use a road tire."

There are differences of opinion as to the best way to start the run. Some riders, figuring that every hundredth of a second counts, wind the engine tight and just let go the clutch lever. The front wheel comes up, and the bike fishtails away from the log, throwing geysers of rocks and dirt. The other school of thought holds that it's foolish to start off like that, because you're out of control and you may not be able to get on the line you wanted to take through the first tricky part of the course. Therefore, many riders slip the clutch to get started. But nobody can afford to be overcautious: if the bike comes off the line *too* slowly, the tire chains will get traction, and the bike will flip.

The Greatest Machine of all. Yamaha R5-C 350cc Street. Acclaimed, "the best middle-weight touring bike in the world." For '70. For '71. And now, for '72, it's even better.

The new Yamaha R5-C is for street riders who won't settle for anything short of the best. From the ground up, this is one 350cc twin without even a hint of wasted space or weight. A bike that thrives on performance and total control.

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Cycle Magazine said: "...if you think that a motorcycle should combine the best from the maintenance, performance, detailing, and transportation points of view, then *your* overall pick will be *our* overall pick: Yamaha's R5... the best production street 350 in the world."

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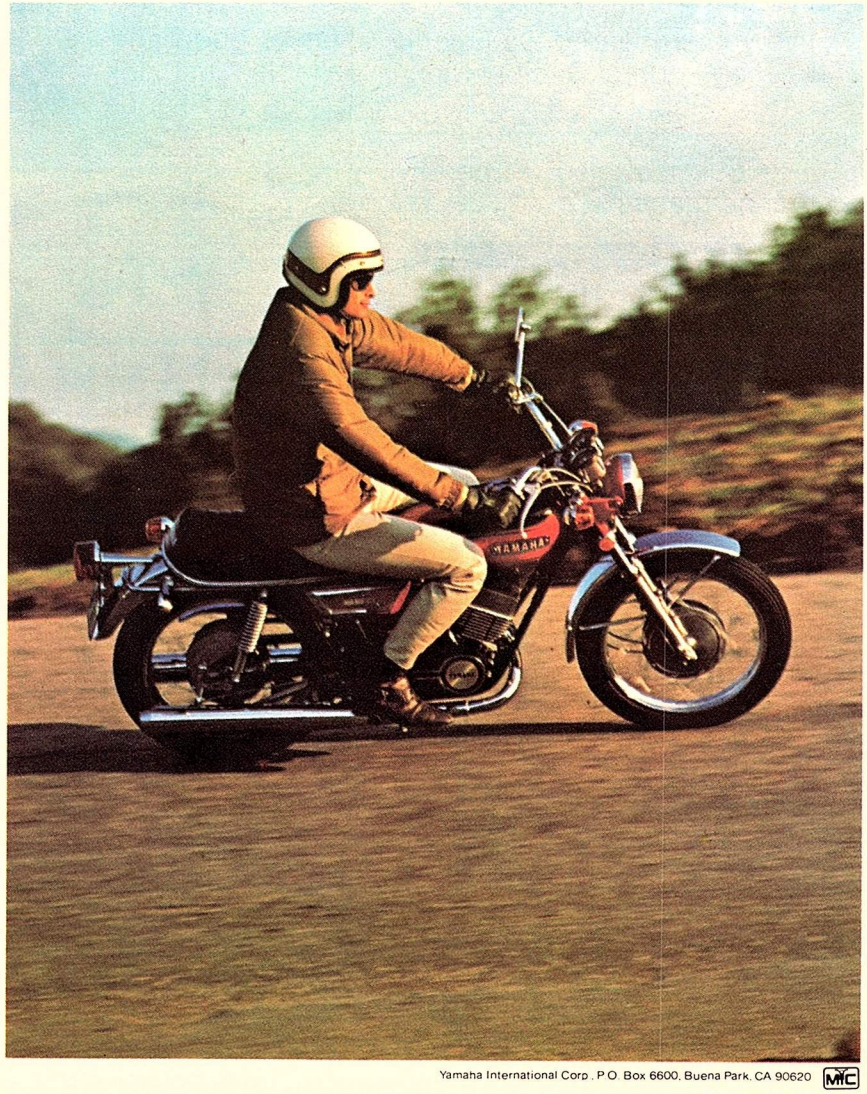

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CIRCLE NO. 29 ON READER SERVICE PAGE

AT LAST. AN 80 BUILT

From Rupp—the first of a line of quality cycles. An intermediate built like the big bikes. The Rupp RMT 80. It isn't a road bike converted for off-road use. It's primarily designed for the rough stuff. But it's also street-legal in 45 states.

It's a well-engineered bike with close tolerances. It's a rugged bike because it's designed on big bike principles. The axle, for instance, is a true axle. Not just a bolt. And where the competition uses rubber bushings in the swing frame, we use bronze. (It's a solid hookup that minimizes fishtailing.)

It's a quiet bike that's five years ahead of its time in beating Federal Decibel Standards (Rupp: 82, 1978 Regs: 83).

But it's also a performance machine.

BIG BIKE PERFORMANCE.

The Rupp RMT 80 comes with an illuminated 80-mph speedometer. It also comes with a torque curve that's flat out through the entire 4000- to 7500-rpm speed range. And it's such a forgiving machine that you can literally shift to any gear in any speed range. The motorcycle-type muffler is performance tuned. And the built-in spark arrester makes it woods approved.

The clutch is a motorcycle multiple disc wet clutch for smoother, easier shifting. The transmission is an all-synchronized four-speed. The chain is a heavy-duty Renold. With super strong side plates. So there's no continuous chain tightening. You just adjust it once and forget it. The kick start is good and reliable. Just kick it once and it goes.

BIG BIKE HANDLING.

Overall geometry is excellent. The RMT 80 is an intermediate that handles like a motocross bike. It's very stable in the turns. (You can ride in little circles forever without ever having to put your foot down.) There's a 29½° front fork rake for more precise turning in a shorter radius.

T LIKE THE BIG BIKES.

And there's no tippy feeling. The oil-dampened front and rear coil suspension is so smooth you can take one hand off the motorcycle handlebars (although we ask you don't) without wondering what's going to happen next. The head post alone uses 34 high-quality ball bearings. There's no movement in the suspension.

The tires are Rupp-designed road knobbies especially developed for this bike. To give you better traction in the rear, better steering up front. For a totally better ride.

BIG BIKE DESIGN.

You can see for yourself how the RMT 80 looks. What you can't see is that its frame is close to the ultimate in a lightweight design. It's a double down-loop, single backbone type. And it's made from chrome Moly 4130 tubular steel. The same kind that's used in championship motocross bikes. So it weighs in at only 135 pounds. (The lightest, bike for bike, that we know about.)

The fenders are the kind other people get to replace their original fenders. Made of durable, flexible ABS. The lower yoke and brake pedal are forged, not cast. So you can see that the RMT 80 is not only built to take it. It's also built to last.

BIG BIKE FEATURES.

The frame-mounted gas tank is cushioned for less vibration and welded for more strength. The footpegs are retractable so you won't get hung up on tight turns. The SAE-approved headlight has a high and low beam. There's also a brake and taillight and six class "A" reflectors—front and rear, left and right. All this plus internal expanding drum brakes, a key ignition, a horn, a two-way kill switch and a full line of accessories.

So check out a Rupp RMT 80 at your Rupp dealer's. Then check out the competition, including the bigger bikes. See if you don't find about 90% of a big bike. At about 60% of the cost.

Which is one more way the RMT 80 is like a big bike. Only smaller.

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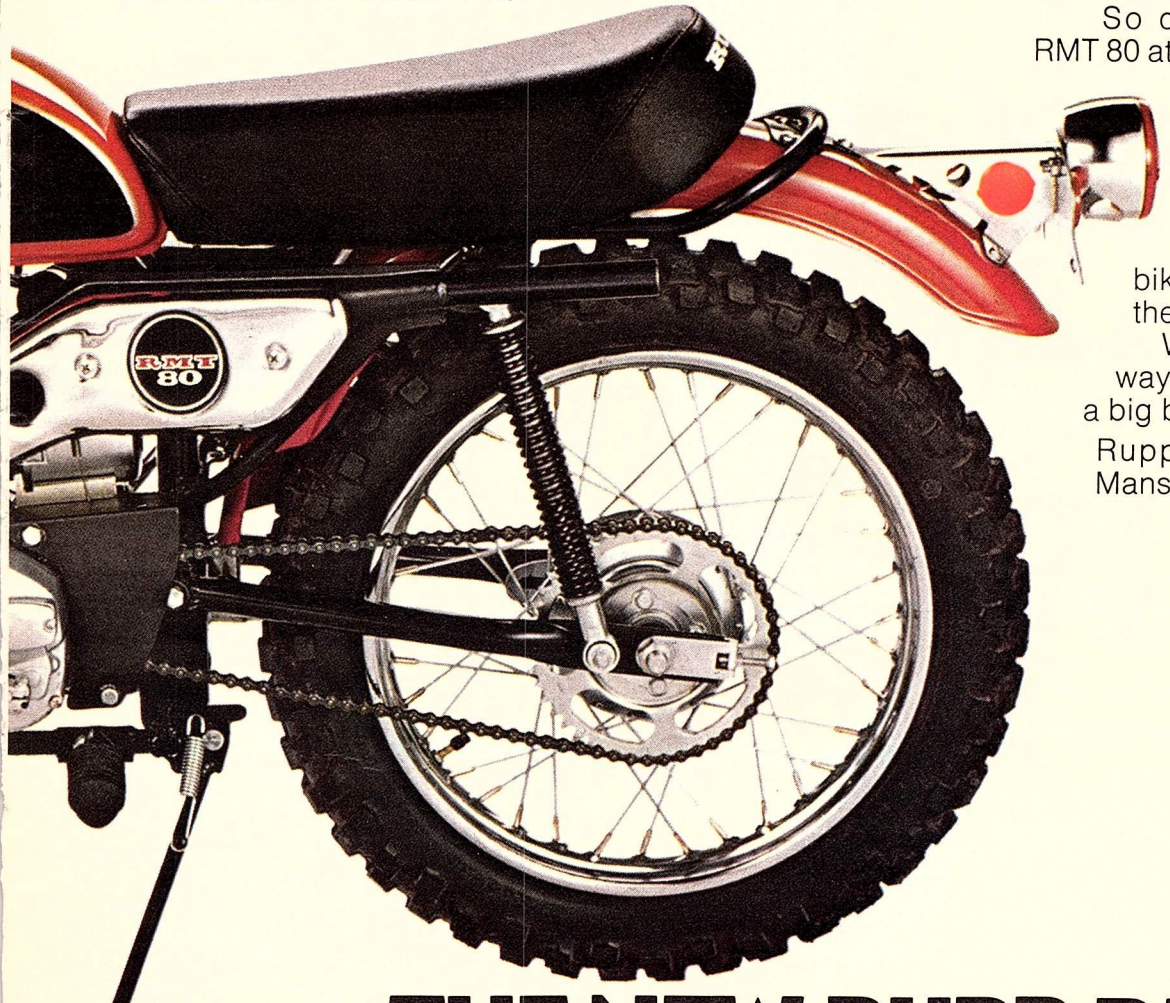

THE NEW RUPP RMT 80.

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Ventilated jacket

Jacket is ventilated by adjustable webbed panel which permits air to be pumped through. Jacket has two waterproof outer pockets plus long easy-access 25-inch "fanny" pocket . . . and three inner pockets. It folds up into a self-contained fanny pack with integral travel belt for easy carry.

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Dressing is simplified. No need to remove boots. Pants zip open from waist to ankles. DuPont Delrin® zippers are self-lubricating and non-fouling.

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New suit is easy to keep in wearable condition. It can be machine washed or dry cleaned. The outer fabric can be renovated simply by spraying with Scotchgard® after multiple cleanings.

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On 9 counts out of 10, the new Trailex suit outperforms conventional waxed cotton:

TESTS BY AN INDEPENDENT LABORATORY

	Waxed Cotton	Innovator Trailex
Warp tensile	149 lb.	407 lb.
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Weatherproof	Yes	Yes
Ventilation	Six ¼" holes	Adjustable back panel
Lining	Cotton	Dacron®-polyester/cotton
Dressing	Take boots off	Zip open waist to ankles
Renovation	Apply melted wax	Spray with Scotchgard after multiple cleanings

Three colors to choose from

The Innovator Trailex suit comes in three attractive colors—red, white and dark blue. Contrasting arm stripes. Sizes are small (34–36), medium (38–40), large (42–44) and extra large (46–48). And the price is $98.00 for years of usage.

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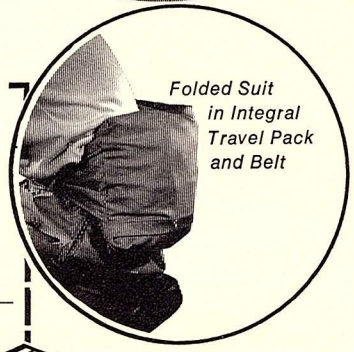

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The events at Chillicothe were scheduled to begin at 2:00 p.m., and by noon all of the riders were in the pits. There wasn't much happening, though, because you don't run a fuel engine anymore than is absolutely necessary. And most of the pro riders have their machines well prepared before they leave home. The exception this time was Doyle Disbennett, who—for the first time in three years—was unable to start his bike. The magneto had gotten tired at the last minute, and Disbennett was frantically trying to outguess it.

The rest of the riders were drifting around saying hello to each other, and casting awed glances at The Hill. Everybody knows everybody else: the Class A Hillclimbers' Association has 67 members, who compete against each other in 18 or 20 events a season.

Professional hillclimbers come in all sizes and shapes—tiny little people and great big heavy ones, ranging in age from early twenties to late forties. One rider wore a skinhead crewcut; others had full flowing heads of hair. There were flamboyant leathers, and there was Earl Bowlby in his traditional BSA windbreaker. But almost all of them shared one characteristic that has nearly disappeared from the motorcycle racing scene: they were—on the surface—calm. Nobody bustled around. The jokes were quiet and wry. In speaking, almost everybody thought about what he was going to say before saying it. The tension had to be there—hillclimbing is like a combination of observed trials and drag racing—but it didn't show, not even in small mannerisms. Roger Kaler says, "All these guys are pretty good actors. And the ones who act the least scared—sometimes they're the ones who are most scared."

But The Hill had them all in its grip. Nobody could figure out how to ride it. The steep slopes with loose deep shale meant pure trouble, right from the start. Then came the ledges, and then the ruts, with no time to regain control. One of the riders said, "A lot of these hillclimbs are very, very close. In last year's National, I finished in fifth place, yet I was only four-hundredths of a second behind the winner. But this hill . . . my guess is that the times will be all over the clock, and everybody'll be taking a different line up the hill." Sure enough, that was the way it happened.

The ledges above the shale caused most of the trouble. The rider would fishtail and claw his way up the shale somehow. Then, on the ledges, the front wheel would come up, and the rear wheel would start bounding. The bike would land in the rutted ground, and for some riders the run would suddenly end right then, as the bike went over backwards. Through hard-earned experience, most of the riders knew how to roll off the bike without getting tangled up with it, and keep on rolling off to the side, to get out of the bike's path as it slid down the hillside. A few of the riders, surprised by the suddenness of the flip, just fell off directly beneath the bike. They were lucky:

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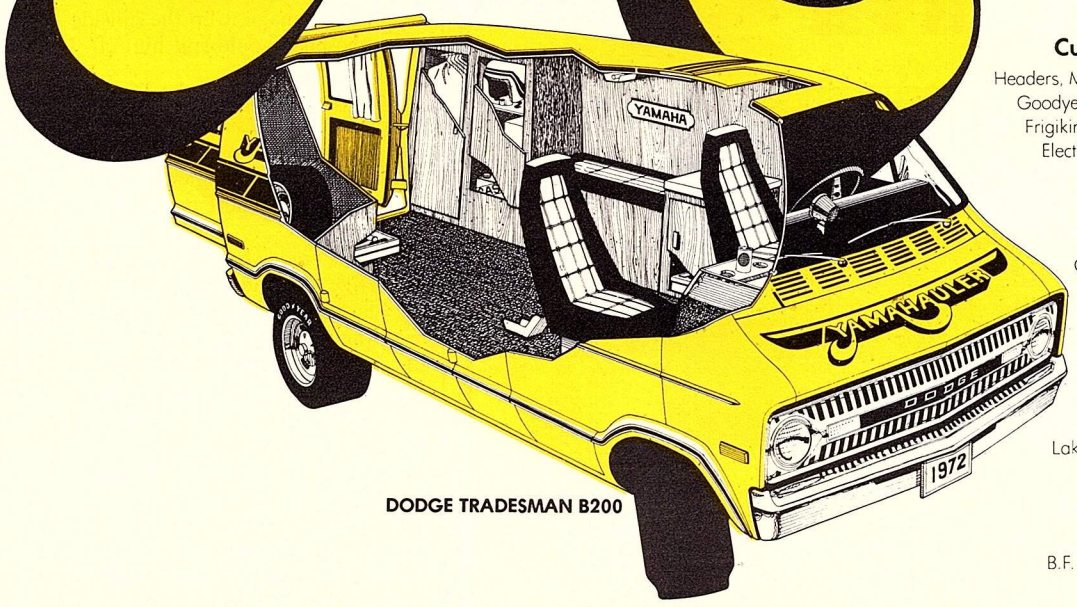

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The Greenhorn National Championship Enduro, May 28/29, 1972: Two days, 500 miles, 6000ft mountains, 100 degree desert heat, 80mph dirt roads, walking-pace, rock-strewn sandwashes.

1st Overall	Bob Steffan	Bultaco
2nd Overall	Dave Ekins	Bultaco
1st Open Expert	Bob Steffan	Bultaco
1st 250cc Expert	Dave Ekins	Bultaco
Father & Son Team	Dave and Greg Ekins	Bultaco

FLASH!!! National 125 Mile Red Garter Enduro. Cuyama, California. July 2nd, 1972. First overall: Bob Steffan (Bultaco 360).
Team Prize: Bultaco (Bob Steffan, Dave Ekins, Tom Patton)

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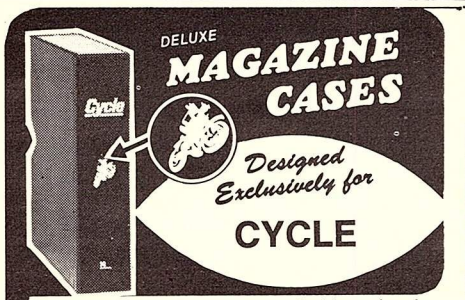

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in each case, the bike's handlebars happened to dig into the ground, preventing the bike from sliding down on top of the rider. Shakily the rider would get to his feet, and the crew on the hillside would help him work his machine down the hillside—or off to the return road.

On some of the machines, the ledges would send the rear end out of control; the bike would hop and slide off to one side of the course, and maybe all the way back to the other side, the rider working frantically to keep the motorcycle upright, in huge clouds of thick, heavy dust. Sometimes the rider would make it up the hillside—more often the bike would spit him off. Nobody made it look easy.

Earl Bowlby made his first run, and it had been unimpressive to say the least. He had reached the top, and the electric-eye timer picked that moment to start getting temperamental. There had been no time on the run.

So Earl comes back for his second try at The Hill. He studies the slope, and picks out his starting point. He and his crewman back the BSA until the rear wheel touches the log. While he is hooking up his kill strap, his helper inserts the starter-lever/side-stand into the cases, romps it, and fires the engine.

Bowlby studies The Hill, grabs the clutch, and punches the shift lever into gear. He revs the throttle with slow, steady motions of his wrist, building up a rhythm. The throttle hits the stop one last time, and he eases out the clutch for an unimpressive start. But the bike gains speed, and it thunders on a slanting course across the steep shale. Then it reaches the ledges. The rear end lifts, starts to slide sideways—as so many of the other bikes have done this afternoon. The throttle pitch changes slightly—maybe he buttons it a flick—and the bike straightens up again, gaining speed on a straight course through the nightmarish ruts, finally disappearing ahead of billowing clouds of dust. The engine runs strong—and it keeps running long enough to reach the top of the hill. A moment later the announcer reports, "The time: 8.72 seconds."

Several minutes later. Bowlby wrestles his bike down the return road; the spectators cheer him. Gray-haired Earl, the mild-looking schoolteacher type, is smiling. And though others try valiantly, nobody can top his time on The Hill. ◉

Formula A Results
1. Earl Bowlby (BSA) 8.72
2. Carl Wickstrand (Tri) 9.06
3. Beese Wendt (Indian) 9.64
4. Jack Taylor (H-D) 9.96
5. Louis Gerencer (H-D) 10.17
6. Larry Huber (H-D) 10.73

Formula B Results
1. James Smith (H-D) 9.90
2. Bill Uhler (H-D) 10.00
3. Raymond Sterns (Tri) 11.00
4. Larry Smith (Indian) 11.02
5. Jerry Kinzer (Tri) 11.90

BERKSHIRE *Cont'd from page 61*

to start on the twenty-second minute, and that I was due at each check point 22 minutes after the key time (the time that riders 101, 201, 301, and 401 were due).

I began to understand why the Penton team is so successful when I went to pick up my bike. Doug Wilford, the advertising manager for Penton Imports was standing in the back of a huge mobile workshop. Before Penton acquired the huge vehicle, it had served as a mobile post office in Texas. The inside had been stripped and outfitted with a complete repair shop and spare parts depot for their team bikes. They were ready for anything: there was even a portable pressure-type washer for cleaning the bikes before loading them for transport.

Surprisingly, the bike I was to ride was absolutely brand new. There wasn't even any gas in the tank. It was a beautifully spindly thing, sitting there in the sun with its dark green and chrome tank, and leather tool/parts kit bolted to the rear of the seat. Ceriani forks and Girling shocks held its wheels away from the fenders with the exaggerated clearance necessary in cross-country motorcycles.

I set the tire pressures at 15 psi, poured in a tank of fuel/oil mix, and rode the bike around for a few minutes. It was a little tight, but only the forks felt unusually stiff. I loosened the axle clamps to see if the fork legs were drawn together and binding. That eased the friction just a little bit, but they were still stiff. The trail would soon work the kinks out, I thought, as I pushed the machine through the inspection procedure.

After all the equipment seals are in place and the checks for compliance with the local street-use laws completed, each machine must be tested for noise level under full-throttle acceleration. The Penton produced 86 dB(A), which is, for the most part, respectably quiet. The Husqvarna 360 and 400cc bikes and the 500cc Yankees seemed to be the only ones having trouble passing the test. There was quite a heated debate about the validity of the test between some of the Husky riders and the officials, but in the end, the Huskys passed with vibration deadeners stuffed between the cylinder fins and their mufflers repacked with fiberglass. Last year, the FIM and the AMA passed a joint resolution which established a 92 dB(A) maximum noise level for ISDT type machines.

After the bike passed the sound level test, it was impounded; I would not be allowed to touch it again until 20 minutes before my departure time in the morning. The 20 minutes each morning is the only "free" working time in the rules. The rest is hard-earned by arriving at the checks early or sacrificed by stopping enroute while you are not sure of your schedule. There is a real science to figuring out how hard and where to push. The faster you go to get to the check in order to accumulate some working time, the more you take out

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of your entire motorcycle.

Along toward dusk, the scene at the Middlefield Fairgrounds was beginning to resemble a modern gypsy convention. Campers, tents of all sizes and shapes, motor homes, and vans (even a few with Mr. Zig Zag curtains) completely covered the three-acre area. Wives, kids and dogs were everywhere, creating a real family-outing atmosphere. Some were cooking with camp stoves, others dined in the mess hall where there was an all-you-can-eat-for-$2.50 line. The aroma of meat and coffee hung in the air as I reluctantly departed this camaraderie, and returned to my plastic motel in Pittsfield.

The next morning I was allowed into the livestock-pen impounding area to get my machine at 8:02. The second group of four riders was just leaving as their time came up on the flip cards. I used my remaining time to cut a clear plastic extension for my helmet bill. Some silver tape that I had rolled around my spark plug socket held the bill firmly in place.

The bikes have to be pushed to the start area with dead engines and without having been started that morning. When your time comes up, you have 30 seconds to kickstart your machine. After that, you may push it away from the start, but you forfeit 10 bonus points. My bike started on the second kick, and I was off. I was in the last wave of 125cc machines. Behind us were the 125-250cc contenders, and an hour behind me the last of the big open-class rock-slingers would be starting. I had picked the 125cc class because I wouldn't have to ride behind any of those big dudes.

The first stretch was down a paved road. Off into the first trail, the little Penton was buzzing happily. The trail was barely marked by my predecessors, and the leaves from last fall were billowing away from the wheels. The tension in my arms faded as I began to loosen up a little bit on an easy rocky climb. The new machine was pulling effortlessly and was even passing a few earlier starters on slower bikes, even though caution had thus far kept me from using full throttle on the new engine. Gear selector problems that we had found on early Pentons had vanished. The pedal clicked each of the six available ratios smoothly and positively into place as it was needed.

The first really difficult section was a deep muddy bog that was about 25 minutes out from the start. I churned easily along, footing now and then as the front wheel slipped sideways on some submerged hard spot. The first series of underwater rocks shot my front wheel abruptly up and I knew I was in trouble. The engine sputtered and died in mid air. Drat, I thought as I settled into the mire. The engine restarted on the first kick, but was so loaded with fuel that it merely sputtered in four-stroking futility. I shut off both fuel valves and the engine came to life again after sputtering for a couple of minutes. With the valves back on, I nudged into low gear and eased out the clutch. The Penton

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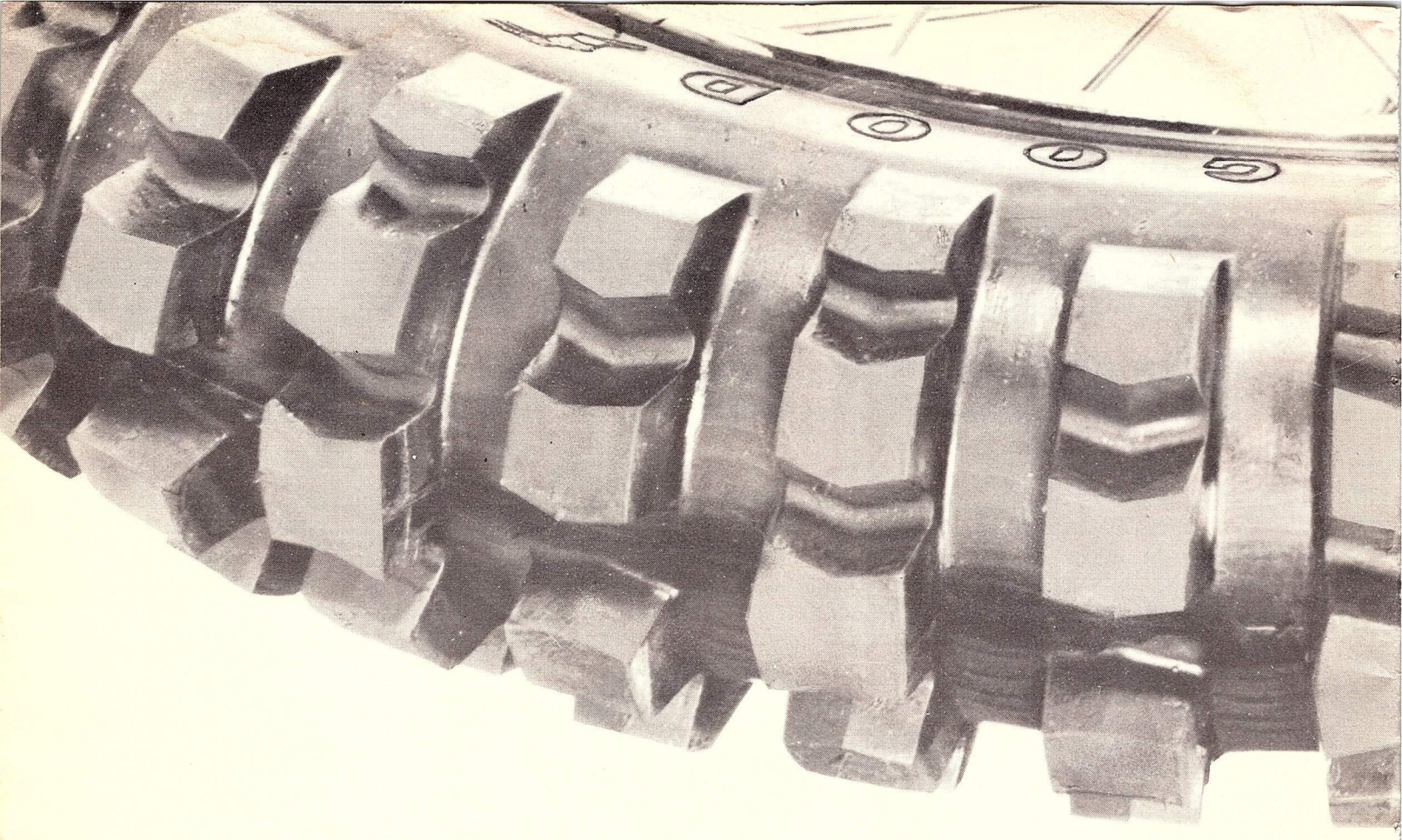

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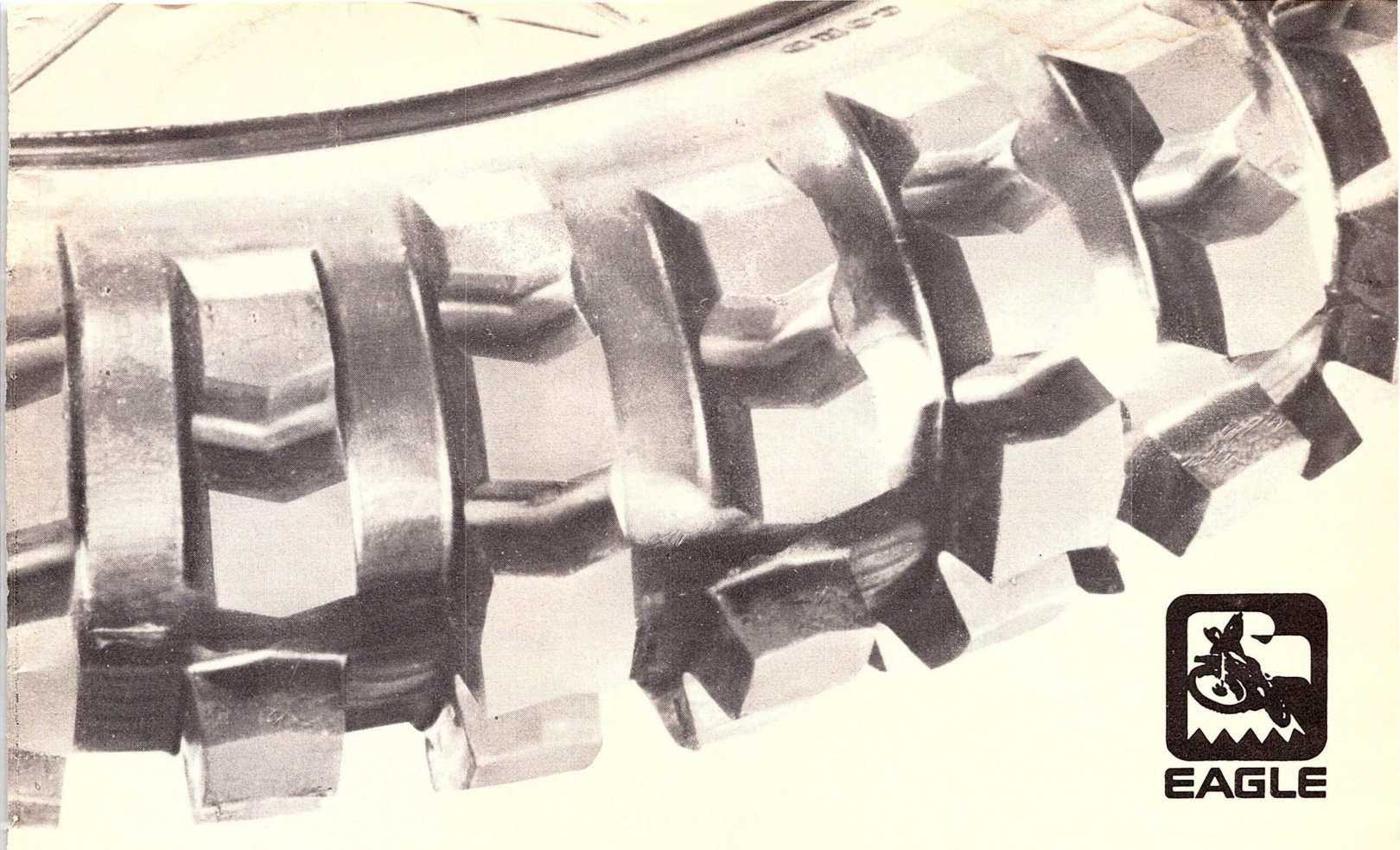

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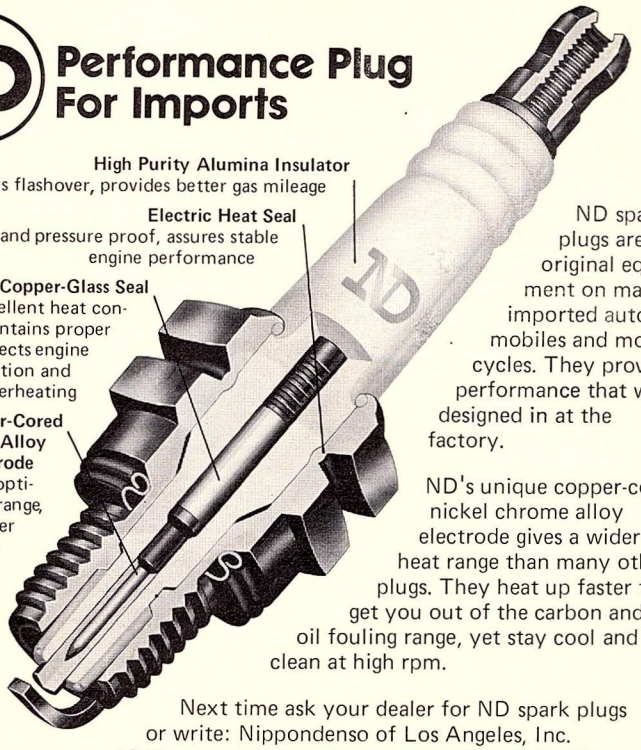

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fairly blasted out of the hole. As long as the engine was buzzing good and fast and there was plenty of throttle opening, things were fine. But each time the bike hit a bump on a greasy, slow section, I would have to repeat the gas-off waiting game. After the fourth time, I figured out that it wasn't something that was going to go away by itself. Sure enough, the low speed air-bleed screw in the carb was closed so tightly that I couldn't open it with my gloved hand. I hadn't put a screwdriver in the tool kit, because I hadn't seen anything to use one on. A little further on, a stalled rider loaned me his screwdriver. With the air screw backed out the requisite one turn, the whole character of the Penton changed. What I had attributed to the low-rev sluggishness of a highly tuned engine vanished. The tiny little engine pulled like a tractor and never stalled again.

Despite the delay from the stalling, there had been enough fast road to make up the time. My number was up on the cards just as I slid into the check.

A couple of good water crossings were the only memorable things between the first checkpoint and the first refuel rendezvous. John Penton was at the gas stop. He had broken his hand in the Burro Enduro the week before and was unable to start the Berkshire on his 175cc Penton. In two minutes, he had filled my tank and barked out a series of suggestions about tightening the spokes before I got to a particularly rough section at mile 85, and I really should do my chain now, etc., etc. All incredibly concise and measured. After a quick mouthful of water, I lubed and adjusted my chain and was gone. A combination tool in the Penton kit fits all the bolts on the rear wheel. It was a real time saver.

Right after the gas stop came the second checkpoint at mile 53. I was several minutes ahead of schedule, so I tightened the rear wheel spokes. Things were going well. Too well.

Then it happened. I got cocky, I guess, and let my attention lapse. The route made an abrupt left turn just past a large outcropping of rock, and I was looking too far ahead. Others before me had done the same, for there were deep tracks going straight. By the time I realized what had happened and backtracked, I had wasted eight minutes. Being some six minutes behind schedule, and with only 14 miles left to the check, I began desperately charging sections which showed great disdain for chargers. The forks seem to go rigid at the higher speed and a thousand devils played tug-of-war with my arms. I felt like I was in one of my childhood nightmares where there were chains holding me back and making my feet spin in loss of traction. I kept waiting for my old reactions to return and allow me to get into a rhythmic pace so that I could cope with the new speed. It never happened.

The cards read 11:29 when I got to the third check, which meant that I was five minutes behind. My gold medal vanished.

And so the rest of the day dissolved into a painful blur. Just before the fourth check, there was a section which ran down an abandoned, submerged railroad track. It wouldn't have been so bad if all or none of the ties had been left, but only some of them were left, and in a very random pattern. Just when I thought the last tie had been hit and I could sit down for a while, bango, another jolt would shoot up my spine that I could feel to the roots of my hair. I had held even at five minutes late to the fourth check.

There were several main types of hazards that are usually found during any long trail ride. Over the years I have learned to cope with all of them except one. Deep ruts in the road always cause me grief. If I try to ride in the rut, the front wheel always tries to climb one side or the other. My natural instinct is to over-correct and forcefully hold the handlebars straight. Then the front wheel tries to climb the other side of the rut and I end up doing a long series of crowhops for the length of the rut. There was a jeep trail on the route between checkpoints 4 and 5; this trail was nothing but miles of hardened, side-by-side ruts. Every one of the new techniques that my growing fatigue allowed me to try failed miserably. The big result of the rutted road was that it left me mad as hell.

Right after the rutted road, the route turned onto a gas pipe right-of-way. A series of easy-rolling, but very high hills led to the crest of the last of the series. A lot of spectators were lined up on both sides of the trail. And one of the riding doctors, who circulated on the route, was sitting on his bike to one side. Oh, oh, I thought, and slowed way down. Honest-to-God, the cliff looked absolutely shear. A lot of guys were repairing their machines at the bottom, near a secret checkpoint. I got about halfway down, clipped a boulder with my foot, and my boot swung up and kicked off the silencer tip. A course marshal at the check informed me that I had to replace the tip before continuing because the exhaust was too loud without it. I agreed, but the springs were lost up on the hill. One of the spectators tossed the tip down. It took me twelve minutes to tie the tip on with some nylon cord I filched from Bultaco's Bill Dutcher, who was manning the check. In an uphill, muddy rocky trail shortly later, my legs were so weak I could not lift my feet onto the pegs.

About half way between checks 5 and 6, I met disaster. The wet, muddy road looked as if someone had draped a giant earthworm up and down. It was wierd looking, but felt okay. As I approached a low spot that was softer looking than the rest, there was a guy stalled almost at the exit of the mire. Since it looked as if the fellow had gotten through most of the hole, I opened the throttle and began to plow through. About a third of the way through, my wheels suddenly sunk in to the axles. The rear tire kept churning away, but nothing else was moving. The guy who was stuck at the other end slogged back and held the throttle while I tried to pull the rear wheel over the firmer soil. It was no use, the stuff was like quicksand. If you put your foot down to try to pull on the bike, your boot would sink to the knee. I shut the throttle off and the guy very slowly waded back to his bike.

Drooling with exhaustion, I was standing there knee deep in the formless muck, semi-thinking of possible ways to get out. As other riders arrived, I waved them around to the firm side. I was almost resigned to hitching a ride when an incredible machine came chugging around the bend. It was a huge diesel, four-wheel-drive, tractor sort of thing that had chained, six-foot diameter tires. The machine, which I later learned was called a "scidder" by the loggers, was dragging a huge mechanical fistful of thirty-foot logs. As the scidder churned through the quagmire, it was easy to see how the hole had been made. It looked like a huge food mixer there in the mud. The operator of the scidder was amiable enough, and he agreed to stop when the outside log was along side me. Then he walked back on the logs and helped me drag the bike up on the logs. The monster had me and my machine out in two minutes.

In my fatigued, foggy state of mind, I had left the fuel valves on all the time the machine had been horizontal on the logs. Kicking the starter with the spark plug out combined with resting and cursing finally purged the crankcase after another forty-five minutes. Gas was pouring out of the spring-loaded exhaust pipe coupling and every time I put the plug back in, it would get sopping wet on the first kick. The spare plugs had bounced their way out of their cartons and the threads were all buggered-up from bouncing against the tools. The engine finally came sputtering to life. It sounded like a symphony and my heart was glad. By the time I got out to check 6 and the last gas stop, everyone had left. I was an hour-and-a-half behind schedule, my back was afire with pain, my spirit was broken, and I was low on gas. A paved road eventually led to a gas station, directions were given, and I rode back to the Middlefield Fairgrounds. It seemed a shame to abandon the Penton after only a third of the run, but it was pointless to continue. The bike was running better than it had when it started.

I numbly pushed the Penton into the impound, somehow got my mud-caked boots and riding suit off, drove back to the motel, and fell asleep many times in the tub before crashing for the last time on May 19, 1972.

The next sound I was conscious of was someone beating on my door. It took me five minutes to get out of bed. Marco Vega, the photographer who was going to shoot the last two days of the Berkshire, was at the door. It was 6:00 a.m. We were at the fairgrounds when the remaining competi-

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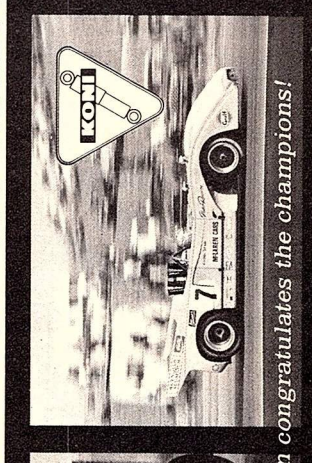
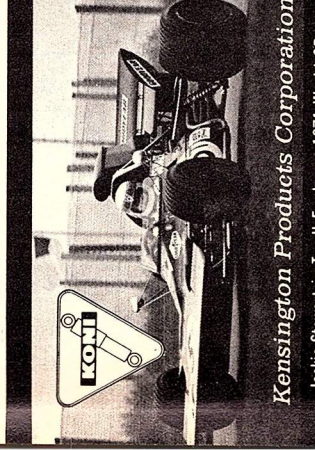


Peter Revson won 1971 Can-Am, Denis Hulme won 1970 Series in KONI equipped McLarens.



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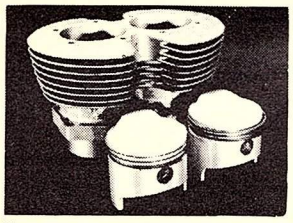

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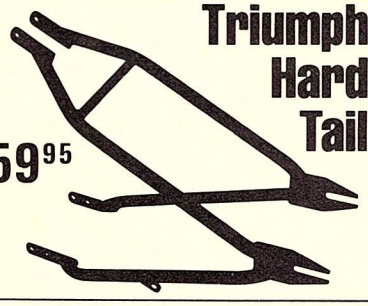

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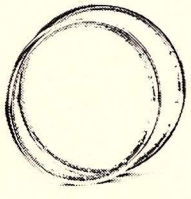

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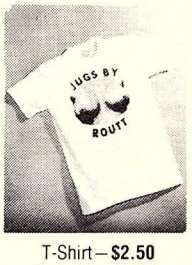

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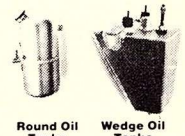

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tors began pushing their machines out tc the work area, shortly after 7:30.

Over half of the 312 riders who had started Friday had succumbed to the same sort of problems I had.

Marco, his assistant, Jimmy Chen, and I spent the next two days driving around to different sections of the route in our van: getting the photos watching how the more talented experts ride, and talking to a lot of different kinds of people.

Standing at the entry of a long, up-hill climb that was covered with running water, we could see that the pros read the tracks of earlier riders just as surely as Indians read the signs of animals. Any time there were more than a few tracks leading around a nasty-looking hole, the alert riders would follow the detour. This is one of the advantages of starting a little later in the bigger engine classes. But each day there are fewer and fewer trailbreakers as the casualties mount.

Several old guys are really excellent riders. Henry Clark of Somers, Connecticut and Brian Inman of Upton, Massachusetts both were riding their Honda 125s brilliantly all three days to win Bronze Medals. Ray Terwilliger of Eden, New York did the same thing on the same bike, and he's no spring chicken, either.

Everything about the Penton and Husqvarna teams is first rate: They are methodically organized and managed, painstakingly prepared, and absolutely brilliantly piloted. You won't see the names of Dick Burleson and Lars Larson among the medal winners because they suffered mechanical problems, but we saw both of them doing impossible things.

We saw several brilliant individual performances which deserve special mention. Jeff Smith, the ex-perennial British motocross champion and now a development engineer at Bombardier in Canada, rode one of the new Bombardier 125cc prototypes to a silver medal. Joe Barker, of Belpre, Ohio, was on Gold medal time on his 185 Suzuki until late Sunday when a freak accident wiped out his chain.

Saturday was miserably wet and cold; the rain had alternated between light drizzle and stiff showers all day. As we watched the riders come bounding and sliding through the tricky mud holes, the differences in physical condition among them were made plain by their stances and ther expressions. The weary slumped on their churning machines, hollow eyes gauging the trail ahead. The physically fit riders posted their bikes like steeplechase horseman, their legs slightly bent at the knees. An the eyes continually flicked about the trail, ranging near and far in sharp-focused assessment, picking out paths of least probable resistance. It seemed the eyes, the brain, and the marvelous blood-and-tissue gyroscope were all wired directly to the throttle: no precious milliseconds were wasted through reaction time. Whenever there was traction available at the wheel, the throttle was open just enough to convert the grip at the tire into maximum thrust.

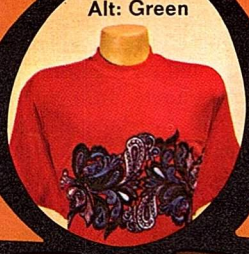
Such intense concentration, for hours at a stretch, generates a reactive drive in an adept rider which is slow to die. We were standing near the last checkpoint, at the base of the fairgrounds, while the returning riders had their cards time-recorded and collected. Though Saturday's run was over, many riders impatiently gunned their throttles while their cards were removed, then continued in a competitive tire-spinning, charge for the final 200 yards into the impound area.

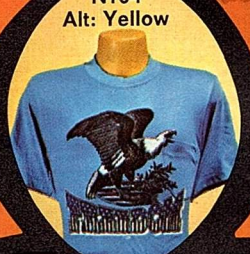
After the impound routine, the riders began to collect in small groups which seemed to form according to riding ability, rather than social compatibility. It was as if it were much easier to bridge communication barriers that way. The talk was extremely animated, often punctuated by wild hand/arm gestures, and centered entirely on the machines and the trail challenges of that day. Mutual intense interest generates a need to communicate that will not be denied. Cultural barriers evaporate and guys try many ways to say something in order to be sure that a thought is being relayed. But normally the strain isn't necessary, for the recognition of a shared experience on the trail is instantaneous. The Real Enduro Lions are gregarious within the topic of their sport, whether they are by personal nature or not.

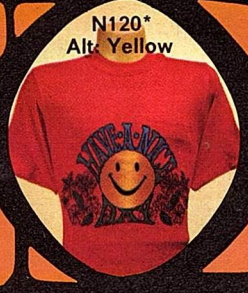
Malcolm Smith was locked in coversation with Al Eames about a particularly grueling section of trail, when a boufant-coiffed tender young thing sidled up to him and cooed, "Oh, Malcolm, you were just great in the movie." Smith was speechless, his usual disarming grin vanished in open-mouthed bewilderment. He could not understand that she could not understand.

There is definitely a generation gap of sorts among the super-experts. Many of the younger team members take their abilities and accomplishments entirely for granted. Often they communicate in an abbreviated California-surfer-type sub-language where hand motions and sound imitations are substituted for words. Mostly talk is sparse, though, and they sit in mute introspection as they remove their gear. The older riders observe without comprehension, the blasé post-event attitude of the young experts. How much of that matter-of-factness is a mirror of real feeling, or lack of feeling? Only they know. They have just great heaping buckets of talent, and not a gnat's piddle of grace.

As the riders continued to slide in out of the thickening mist, their time cards were collected and sent up to the scoring room, which was located upstairs, over the main fair building. It was quiet up in that room, like a small-town barbershop. The only sounds came from the out-of-phase clicking of the Japanese time clocks, which print the times on the cards at the checks, and from a mud wasp who was looking for a hole in the ceiling. Four gals managed the score tallying and recording. Huge seg-







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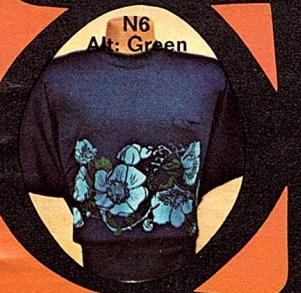

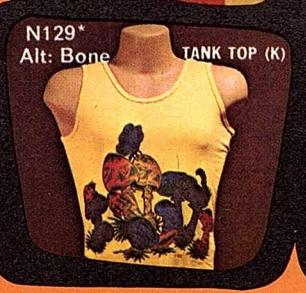

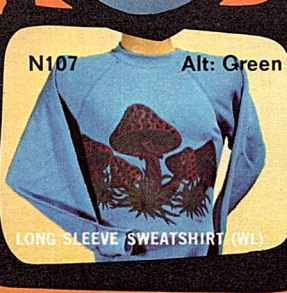

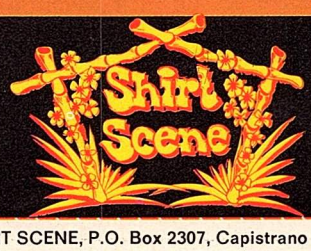

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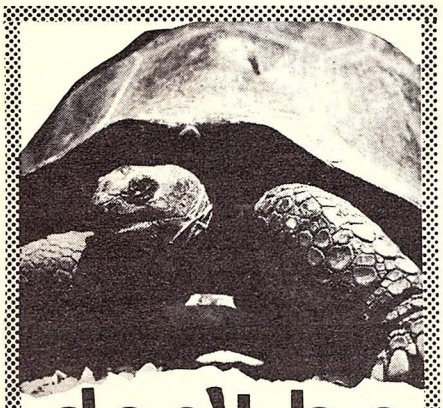

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mented scoring charts were layed out on poster boards, and each entrant had a slot on one of the charts. Jane and Roberta Hicks (wife and daughter of Bob Hicks), Joyce Mitchell (wife of Fred Mitchell), or Sandy Ferguson would take the time cards as they came in and transfer the data to the main charts.The whole thing was slick, efficient and well organized. The last rider was due in at 6:01, and the total scores were posted for the entrants inspection at 7:00. Thirty percent of those who had survived Friday had fallen by the wayside.

Sunday morning Al Eames was forced to leave the fairgrounds at 6:00 a.m. to reroute a section that was submerged in Saturday's rain. But by the 8:00 a.m. starting time, the sun broke through the clouds and stayed that way all day.

We were at the third checkpoint. The riders coming through reported that the trails weren't significantly different in terrain from the two previous days, but seemed much rougher. And the grind was telling. More and more of the guys who were on Gold or Silver Medal time were not showing up, or were behind schedule. Dave Eames, son of the organizer, was on the lone remaining Yankee. His teammates had lost their engines to defective air-cleaners. Tom Clark's Rokon prototype lost its head gasket on the first day and Tom was riding along side the surviving Rokon, ridden by Gary Snider, on a borrowed Penton. "Just to observe the prototype in action," he said. Malcolm Smith lost his Gold Medal when he rode the speed test section with a pair of Vise-Grips in place of his rear axle nut. As if by magic, a new (unmarked) axle was on his bike at the finish.

As the finishers began arriving at the fairgrounds that afternoon, even the most seasoned experts were looking beat. No longer were they twitching the throttles like kids at a traffic light.

When the machines get through the time clock at the finish, they are inspected to see that the paint-and-wire seals are intact and that the lights would still shine. There was a lot of stopping just before the check to tape bare, spare bulbs to the wires in order to not lose bonus points. The inspectors quietly and carefully went about their business; there was none of the exaggerated self-importance that one often encounters at bike events from the officials.

As the final results were announced and the awards were presented at 5:30, the winning trailriders stepped forward to be acknowledged as the best, most steadfast and luckiest. Gold Medals were awarded to all those who lost no enduro points, and had no more than 125 percent of the number of bonus points counted against the first place man. Silvers went to those who had fewer than 25 enduro points and fewer than 150 percent of the winner's bonus points. Bronze Medals went to riders who were never more than a total of an hour behind schedule.

In mid-June, after the Berkshire, the AMA announced that the 1973 ISDT site had been removed from Ft. Hood, Texas and awarded to The Greylock Riders of the Berkshire Mountains. The point was that the Texas site just wasn't tough enough to provide a sufficient challenge to the international champions. From what we saw at the Berkshire this year, Al Eames will give the first American ISDT its best possible shot. ◉

125cc Gold Medalists:	Enduro Marks	Bonus Points
Tom Penton		
Ohio, (Penton)	0	1179
Jack Penton		
Ohio, (Penton)	0	1238
Bill Uhl		
Ohio, (Penton)	0	1326
Dane Leimback		
Ohio, (Penton)	0	1440
250cc Gold Medalists:		
Ron Bohn		
Penn., (Husky)	0	1163
Bob Fielding		
Conn., (Yamaha)	0	1365
Bob Thompson		
New York, (Ossa)	0	1374
Jeff Penton		
Ohio (Penton)	0	1399
Open Class Gold Medalists:		
John Fischer		
Penn., (Husky 400)	0	1185
Buck Walsworth		
Indiana, (Ossa 250)		
Dave Mungenast		
Missouri, (Honda 250)	0	1514
125cc Class Silver Medalists:		
Eric Baer		
Mass, (Penton)	4	1545
Paul Lussier		
R.I., (Penton)	6	1684
Doug Wilford		
Ohio, (Penton)	8	1550
Jeff Smith		
Quebec, (Bombardier)	16	1288
Bren Moran		
New York, (Penton)	18	1447
Ted Dean		
Conn., (DKW)	20	1472
250cc Class Silver Medalists:		
Malcolm Smith		
Calif., (Husky)	0	1583
Gerald Pacholke		
Ohio, (Puch)	6	1523
Ray Kussmaul		
Ohio, (Penton)	14	1528
Seppo Makinen		
Ontario, (Kawasaki)	17	1443
Stan Rubottom		
Missouri, (Husky)	23	1554

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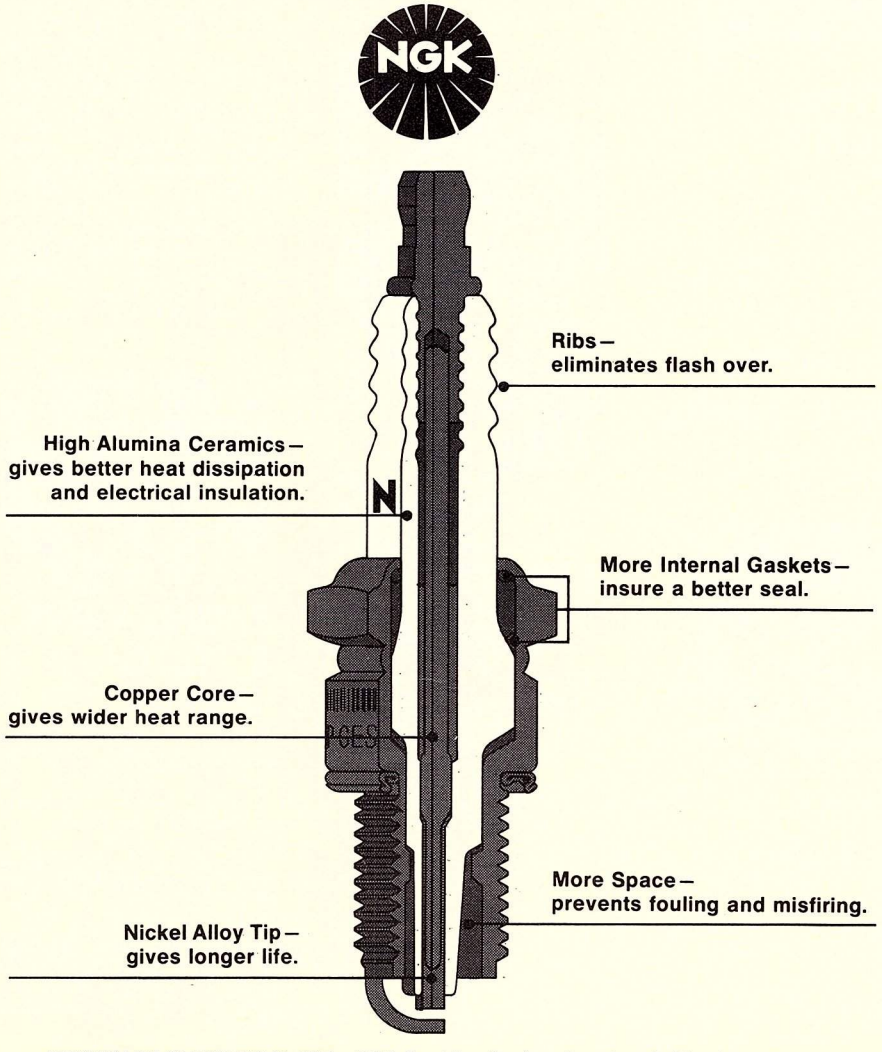

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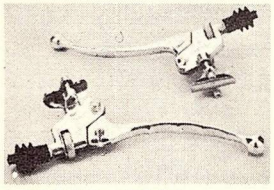

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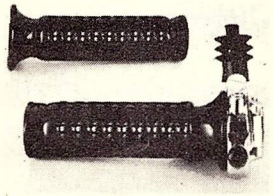

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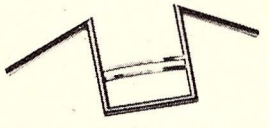
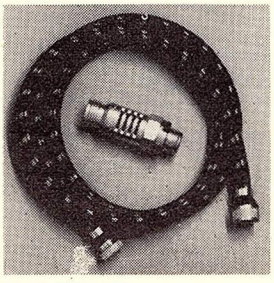


CUSTOM Z-BARS

Top-quality steel, handsomely chromed. Available in 8-inch or 10-inch rise. **With crossbars $16.95 / Plain $12.95.**



POCKET TIRE PUMP

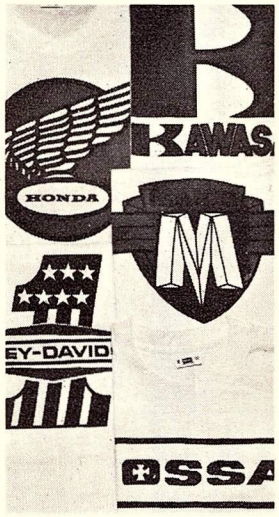
Handiest item yet! Screws into sparkplug hole on any 2-stroke or 4-stroke single or multicylinder. **$4.95** (12-foot car size **$6.95**).

JUDSON SEE-DEE IGNITION

Power-boost through better spark. Increases plug and point life. Improved starting. *3-YEAR GUARANTEE!* Give make, model. **$24.95.**

BELT BUCKLES

Your favorite bike brand in baked enamel design on gleaming nickel-silver background. Really sharp! **$4.95 each.**



T-SHIRTS

Leading brand quality shirts with super-colorful cycle designs. All popular cycles (and many not so popular). Honda, Yamaha, Suzuki, Kawasaki, Bridgestone, Triumph, BSA, Huskvarna, Sachs, Penton, Norton, Ducati, Harley, Hodaka, Montesa, Maico, Bultaco, BMW and more. Also novelty designs including American Flag, Peace Symbol, Chopper, Raggedy-Ann, Mini-Enduro. **$3 or two for $5.** Specify size: S, M, L, XL

DECALS

Use them on your bike, car, toolbox; almost anywhere! Bright colors, groovy designs. **Any 5 only $2.**

REPAIR MANUALS

HONDA: 50, 70, 90, 100, 125, 160, 175, 250, 305, 350, 450, 500, 750cc (Specify Model) . . **$5.50 each**

YAMAHA: Rotary Valve Singles, Twins, Enduros. (Specify Model) . . . . . **$4.50 each.**

TRIUMPH: 500 & 650cc **$5.50**

BSA **$6.00**

DUCATI **$4.00**

KAWASAKI: Singles, Twins & Threes (Specify Model) . . . . . **$5.50 each**

SUZUKI: Singles, Twins (Specify Model) . . . . . **$5.50 each**

MODERN MOTORCYCLE MECHANICS **$8.00**

HOW TO WHEELIE **$4.00**

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CARB SYSTEMS **$7.00**

TROUBLESHOOTING . . **$5.00**

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Also complete line of repair manuals for foreign and American automobiles.

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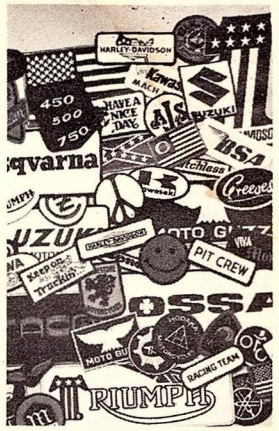
Gain lost horsepower. Prevent clutch slippage and valve float. Finest available. Premium silicon chrome wire. Used on America's fastest cycles.

CLUTCH SPRING KITS:

Honda 160, XL250, 305, 450, 500, 750. Triumph 650. **$6.95 per kit. Sportster $9.95.** Specify make, model.

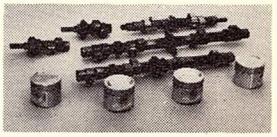
VALVE SPRING KITS:

Honda S-90, 100cc models **$8.95.** Honda Twins (160, 175, 305, 350) **$16.95.** Honda 500, 750, **$36.95.** Triumph 650 **$19.95.** (Soon avail. for Honda XL250).



EMBROIDERED PATCHES

Top quality Swiss-embroidered emblems. Sew on jackets, shirts, etc. Available for nearly all cycles including many not shown. **Large back size $3, or two for $5. Smaller sleeve size $1 or 6 for $5.**



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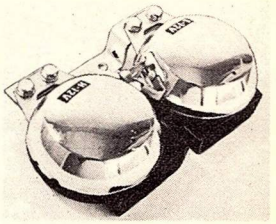
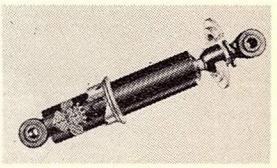


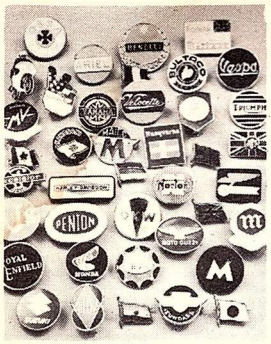
LOUD, LOUD HORNS

Let them hear you coming. Dual electric horns designed to be heard. Nice chrome-plated finish. Supplied with universal bracket that will adapt to almost any bike. Specify 6 or 12 volt. **$11.95.**



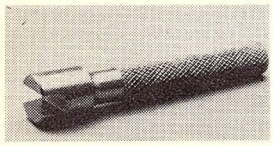
KONI SHOCKS

World's finest. Superior design will improve your motorcycle's handling for performance and safety. Available for most bikes, including Honda 350, 450, 500, 750; Triumph, Kawasaki, BSA, BMW, Moto Guzzi, Yamaha (including Enduro models), Norton, Suzuki, and others. **$48.00 pair** (plus $2 shipping). (Springs not included)



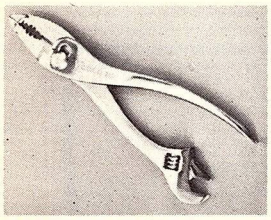
LAPEL PINS

Proud of your bike? Let the world know it! Wear these attractive pins on your suit or jacket. Baked-enamel designs. Many cyclists collect them. **$1.25 each. Five for $5.00.**



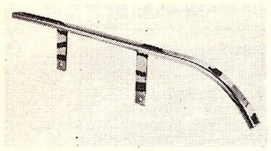
SPOKE WRENCHES

Don't use the wrong tool for critical spoke adjustments. Every mechanic and do-it-yourself biker should have the proper spoke wrenches. **Complete set of six wrenches only $6.95.**



MULTI-TOOL

Four-in-one compact tool that can do almost any emergency repair. Pliers, wire cutter, crescent wrench and screwdriver. American-made forged steel, nicely chromed. Made to last. Could be worth many times its cost on a deserted highway or on a lonely trail. **$4.95.**

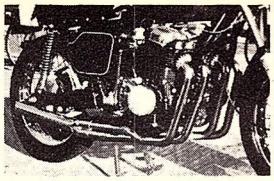


CHAINGUARDS

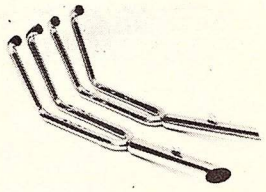
Polished aluminum, slimline look. Honda 500 or 750. Instant bolt-on. **$12.95.** Chrome chainguard for 350, 450, 750 **$16.95.**

KEY FOBS

Your favorite cycle insignia colorful baked enamel on English leather thong. Not shown but also available, fobs for all popular cars, zodiac signs. **$2.00 each.**



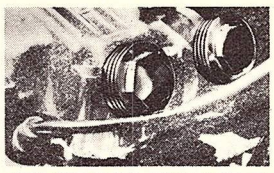
Four-Into-One



Four-Into-Two

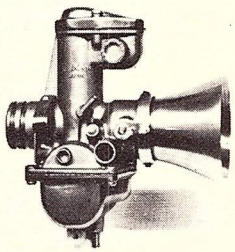
HONDA FOUR EXHAUST SYSTEMS

Four-Into-One or Four-Into-Two for the 500cc and 750cc Fours. Big, noticeable power boost, lightweight, very attractive. Deep, mellow sound. Gleaming deep-chrome finish. Easy installation. **$95.00 each** (plus shipping).



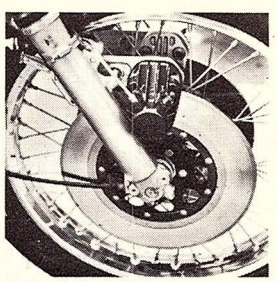
CUSTOM HONDA VALVE COVERS

Polished, precision-machined aluminum. Finned for custom engine look. Easy installation. Honda 350, 500, 750. **Set of Four $9.95. Set of Eight $17.95.**



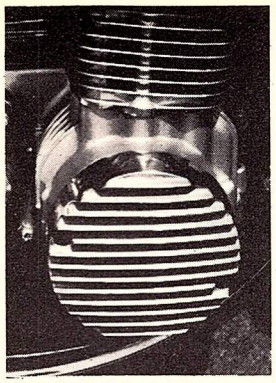
VELOCITY STACKS

Dyno-tested for MORE POWER! Attractive, lightweight machined aluminum. Available with or without screens. **Honda Twins $10 pair, Honda Fours $20 set.** Specify model.



DUAL-DISC BRAKE KIT

Super stopping power. Contains *everything* needed for conversion, including disc, caliper, bolts, hydraulic lines, etc. Honda 750 **$99.50.** Honda 500 — Write for information.



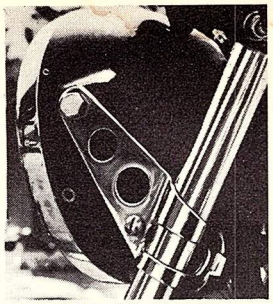
FINNED ENGINE COVERS

Racecrafters original. Finest machined aluminum. Designed to *fit*. Deep-finned styling matches engine fins. Highly polished. Bolt-on in minutes. Honda 450, 500, 750.

HONDA 750
#C-1 Point cover **$12.95**
#C-4 Alternator cover . . **$ 8.95**
#C-6 Clutch cover **$10.95**
ALL THREE **$29.95**

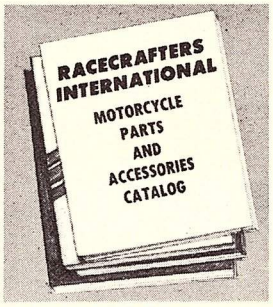
HONDA 500
#C-3 Point cover **$12.95**
#C-5 Alternator cover . . **$ 8.95**
#C-7 Clutch cover **$10.95**
ALL THREE **$29.95**

HONDA 450
#C-2 Alternator cover . . **$12.95**



CUSTOM LITE BRACKETS

The finishing touch for a custom front-end. Gleaming chrome finish. Install without disassembling forks. Fit nearly all bikes. **$12.95 pair.**



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CIRCLE NO. 55 ON READER SERVICE PAGE

Open Class
Silver Medalists:

Don Metz		
New Hamp., (Yamaha)	9	1530
David Eames		
Conn., (Yankee)	15	1539
Edward Ortone		
New York, (Husky)	17	1525
Jerry Dugan		
New Jersey, (Yamaha)	17	1650

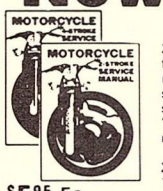
125cc
Bronze Medalists:

Brian Inman		
Mass., (Honda)	31	1643
William Collins		
New York, (Honda)	50	1662
Ronald Greene		
Conn., (Penton)	40	1716
Ray Terwilliger		
New York, (Honda)	66	1862
David Hull		
New York, (Puch)	76	1750
Paul Valovic		
New York, (H-D)	77	1845
Phil Oliver		
Texas, (Suzuki)	84	1691
Dale Barris		
Ohio (Penton)	85	1648
Joseph Curti		
Mass., (Penton)	103	1501
Henry Clark		
Conn., (Honda)	113	2025
Gordon Razee		
R.I., (Penton)	118	1421
Phil Rader		
Ohio, (Penton)	160	1919

250cc Class
Bronze Medalists:

Bill Van Buren		
Mass., (Greeves)	28	1589
Peter Sullivan		
Conn., (Bul)	36	1449
Ronald Gluck		
Conn., (Bul)	39	1844
Matt Weisman		
Ohio, (Penton)	41	1689
Ray Boasman		
Ontario, (Ossa)	43	1568
Frank Piasecki		
Ohio, (Husky)	46	1614
Joe Carson		
Ohio, (Montesa)	53	1689
Helmut Clasen		
Ohio, (Ossa)	55	1438
Kenneth Ives		
Conn., (Honda)	57	1520
Mike Shinners		
New York, (Bul)	64	2164
Peter Sercombe		
Conn., (Bul)	84	1983
Hal Graham		
Ohio, (Husky)	87	1719
Dave Sanderson		
Indiana, (Husky)	95	1925
Don Austin		
Ontario, (Bul)	107	1941
Hugh Lim		
Ontario, (Ossa)	108	2211

New MOTORCYCLE Service Manuals



2-Stroke – Volume 1, 3rd edition, 264 pages. Complete instructions for every thing from brake adjustment to engine tear-down and reassembly. Includes nearly every 2-stroke cycle through '71 and many '72 machines. 120 models of 21 manufacturers.

4-Stroke – Volume 2, 3rd edition, 248 pages. Covers 90 models of 16 manufacturers of nearly every 4-stroke built through '71 and some '72 models. Includes specific service fundamentals peculiar only to 4-stroke engines.

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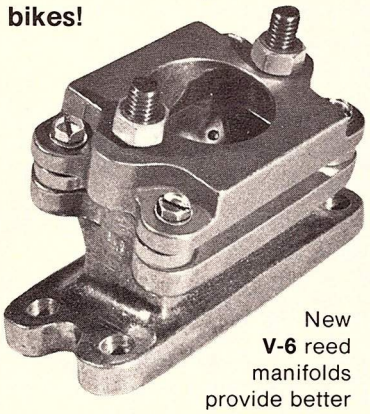

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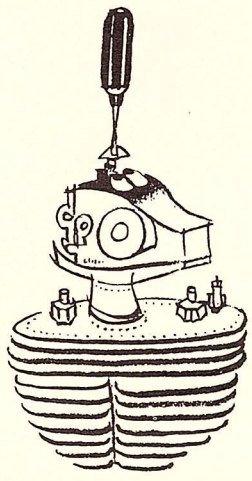
Roy Ward Mass., (Yamaha)	109	1976
John Cygnor Conn., (Ossa)	122	1739
Paul Boisvert Maine, (Bul)	132	3414
Owen Christman New York, (Bul)	138	1965
Hank Hale Mass., (Yamaha)	141	2307

Open Class
Bronze Medalists:

Gerald Dinnen Conn., (Husky 400)	58	1560
John Russotti New Hamp., (Bul 360)	97	1790
Dave Charleville Missouri, (Husky 400)	127	1832

TRADE TEAMS:
First Place: Penton Imports
Jack Penton
Jeff Penton
Dane Liembach
Doug Wilford
Second Place: Husky A Team
Malcolm Smith
Lars Larson
Carl Berggren
Jack Lehto
Third Place: Team Nash
John Rodi
Eugene Esposito
Edward Ortone
Gerald Dinnen

CLUB TEAMS:
First Place: Bohn's Husky Riders
Ron Bohn
John Fischer
Dave Mungenast
Frank Paisecki
Second Place: Amherst Meadowlarks
Bob Grodzinski
Bill Uhl
Tom Penton
Ray Kussmaul



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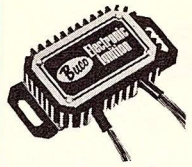

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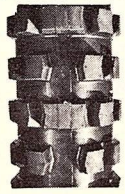

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CIRCLE NO. 42 ON READER SERVICE PAGE

"THE GREATEST R

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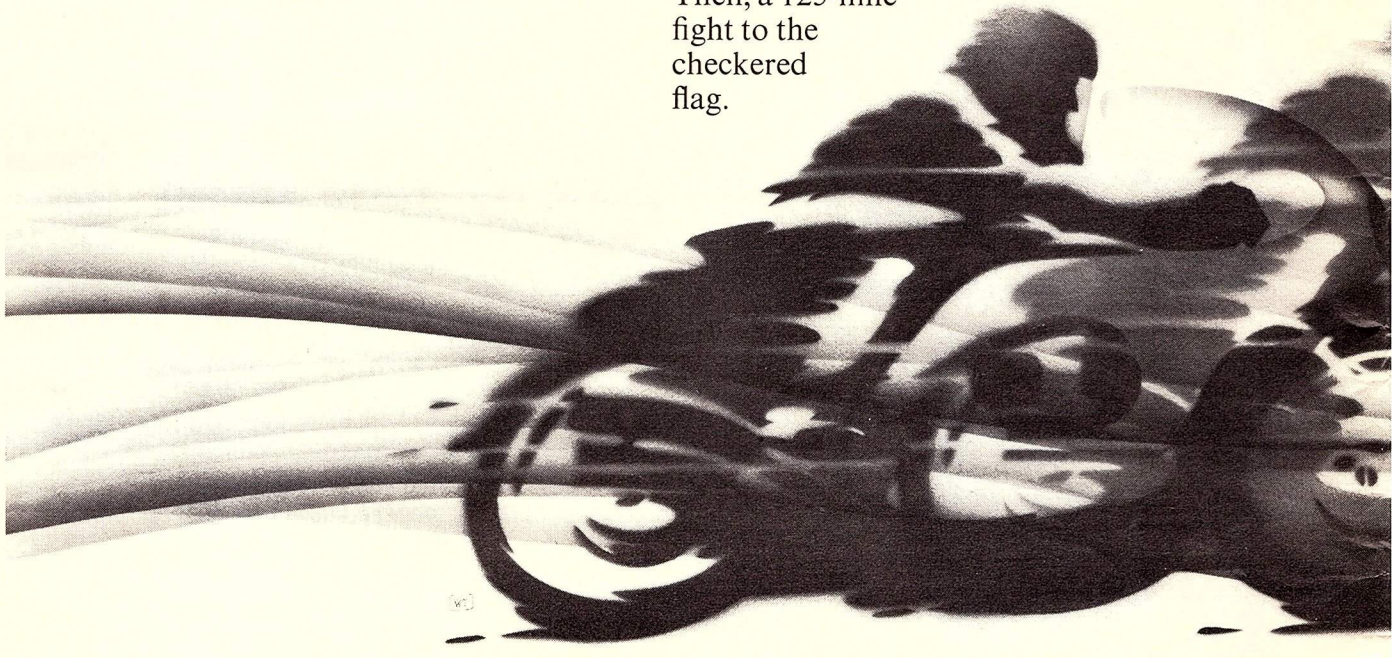
In case you missed the first Champion Spark Plug Motorcycle Classic, you've got another chance on Sunday, October 1.

The second running of the Champion Spark Plug Motorcycle Classic.

A blistering 250-mile road race divided into three parts. One hundred twenty-five miles, followed by a mandatory 45-minute pit stop during which the bikes are literally rebuilt in the pits. Then, a 125-mile fight to the checkered flag.



The pit stop simply makes everybody more competitive for the final heat. How competitive? How does half a dozen lead changes per lap sound? Or a final winning margin of *four inches?* It all happened last year.

And, things might even be closer this year. Because every hot shoe who can beg, borrow or steal a ride wants a shot at nearly $100,000 in prize money (plus a possible national AMA championship). All the great American riders will be there, plus a few legendary European names who only come out for the big, big money.

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Cycle News

And that's just the climax to four full days of racing excitement.

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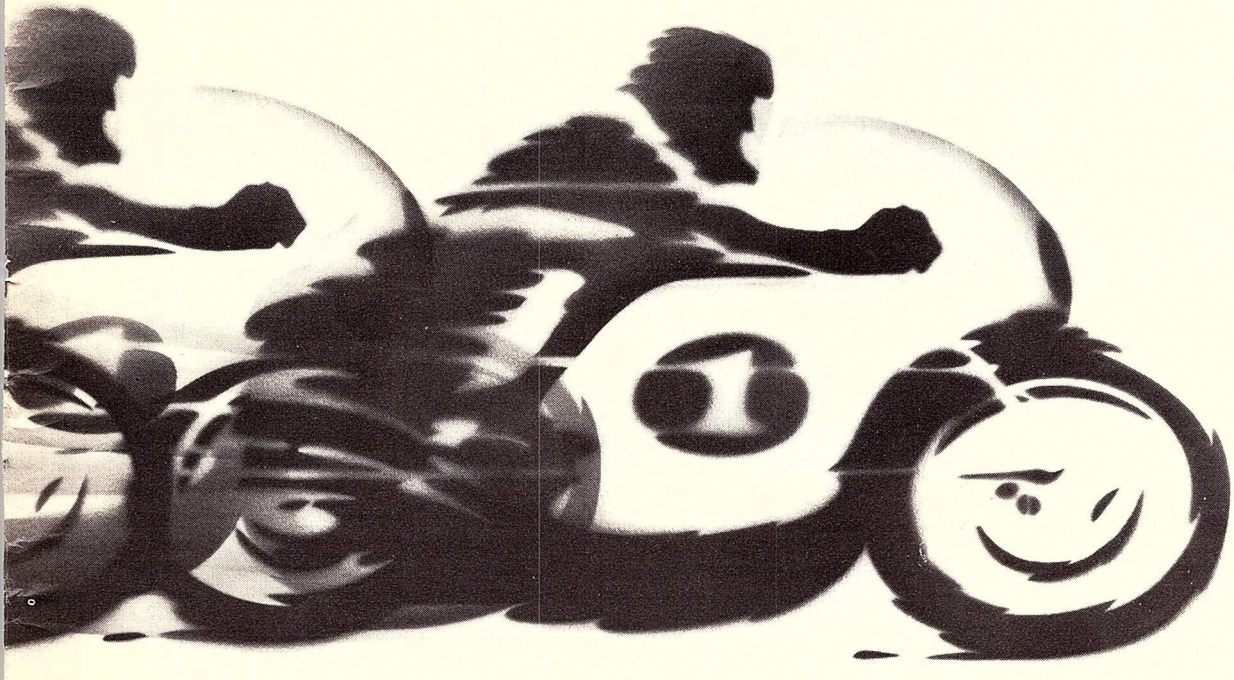
See it all if you can. But don't miss the big one, the second annual Champion Spark Plug Motorcycle Classic.



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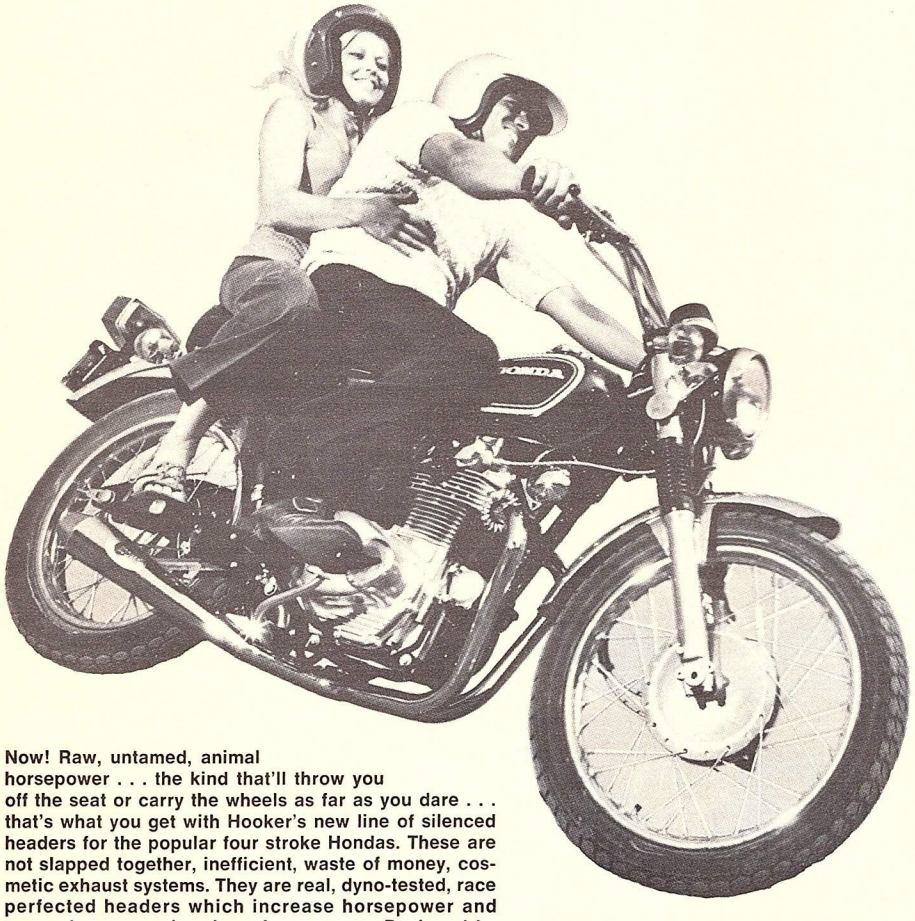

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1. Clip one of the coupons (two are provided in the event a second person reading this copy wishes to use the service). Print or type your name and address where indicated. Be sure to include Zip Code.

2. Please answer *all* questions and circle the number on the coupon which corresponds to the number at the bottom of the advertisement, or New Products Editorial Listing, for which you want additional information. (Key numbers for advertised products also appear in advertiser's index on the opposite page.)

3. Paste the coupon on a government post card or place it in an envelope and mail to:
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4. Your request for information will be forwarded to the appropriate companies. Please allow 4 to 6 weeks for them to fill your requests.

EXPIRES OCTOBER 28, 1972 CC 9/72 12

Name_____

Address_____

City_____ State_____ Zip Code_____

PLEASE ANSWER ALL QUESTIONS BELOW AND TYPE OR PRINT AS CLEARLY AS POSSIBLE

1. How many motorcycles do you now own?
A ☐ 1 B ☐ 2 C ☐ 3 or more D ☐ None

FOR MOTORCYCLES CURRENTLY OWNED, PLEASE COMPLETE THE FOLLOWING:

Answer for most recent purchase if more than one is owned.

2. What make?
1 ☐ BSA 4 ☐ H-D 7 ☐ Kawasaki 10 ☐ Suzuki
2 ☐ BMW 5 ☐ Hodaka 8 ☐ Norton 11 ☐ Triumph
3 ☐ Bultaco 6 ☐ Honda 9 ☐ Ossa 12 ☐ Yamaha
13 ☐ Other

3. What engine size?
A ☐ 40-99cc D ☐ 300-399cc G ☐ 600-699cc
B ☐ 100-199cc E ☐ 400-499cc H ☐ 700-799cc
C ☐ 200-299cc F ☐ 500-599cc J ☐ 800cc & up

4. Excluding motorcycle(s) currently owned, had you previously owned a motorcycle? 1 ☐ Yes 2 ☐ No

If YES:

5. What make? (Most recently owned, if more than one.)
A ☐ BSA D ☐ H-D G ☐ Kawasaki K ☐ Suzuki
B ☐ BMW E ☐ Hodaka H ☐ Norton L ☐ Triumph
C ☐ Bultaco F ☐ Honda J ☐ Ossa M ☐ Yamaha
N ☐ Other

6. What engine size? (Most recently owned, if more than one.)
1 ☐ 40-99cc 4 ☐ 300-399cc 7 ☐ 600-699cc
2 ☐ 100-199cc 5 ☐ 400-499cc 8 ☐ 700-799cc
3 ☐ 200-299cc 6 ☐ 500-599cc 9 ☐ 800cc & up

7. Do you plan to buy a new motorcycle within the next 12 months?
A ☐ Yes B ☐ No

If YES:

8. What make are you most seriously considering? (Check ONE.)
1 ☐ BSA 4 ☐ H-D 7 ☐ Kawasaki 10 ☐ Suzuki
2 ☐ BMW 5 ☐ Hodaka 8 ☐ Norton 11 ☐ Triumph
3 ☐ Bultaco 6 ☐ Honda 9 ☐ Ossa 12 ☐ Yamaha
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C ☐ 200-299cc F ☐ 500-599cc J ☐ 800cc & up

10. How much do you plan to spend on motorcycle *accessories* (e.g. protective clothing, goggles, special instruments, tools, mirrors, etc.) within the next 12 months?
1 ☐ Less than $30 3 ☐ $50-$59 5 ☐ $100-$149 7 ☐ $200-$299
2 ☐ $30-$49 4 ☐ $60-$99 6 ☐ $150-$199 8 ☐ $300 or more

11. What is your age?
A ☐ Under 18 C ☐ 21 - 24 E ☐ 35 - 44 G ☐ 55 - 64
B ☐ 18 - 20 D ☐ 25 - 34 F ☐ 45 - 54 H ☐ 65 or over

For information on items circle numbers below.

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SEPTEMBER 1972

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Name_____

Address_____

City_____ State_____ Zip Code_____

PLEASE ANSWER ALL QUESTIONS BELOW AND TYPE OR PRINT AS CLEARLY AS POSSIBLE

1. How many motorcycles do you now own?
A ☐ 1 B ☐ 2 C ☐ 3 or more D ☐ None

FOR MOTORCYCLES CURRENTLY OWNED, PLEASE COMPLETE THE FOLLOWING:

Answer for most recent purchase if more than one is owned.

2. What make?
1 ☐ BSA 4 ☐ H-D 7 ☐ Kawasaki 10 ☐ Suzuki
2 ☐ BMW 5 ☐ Hodaka 8 ☐ Norton 11 ☐ Triumph
3 ☐ Bultaco 6 ☐ Honda 9 ☐ Ossa 12 ☐ Yamaha
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61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
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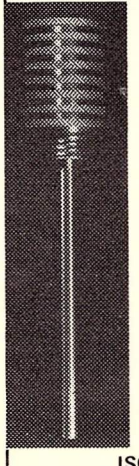

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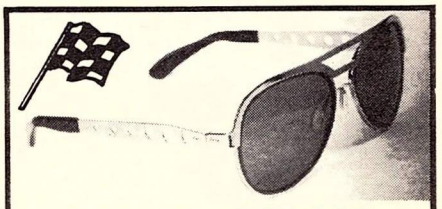

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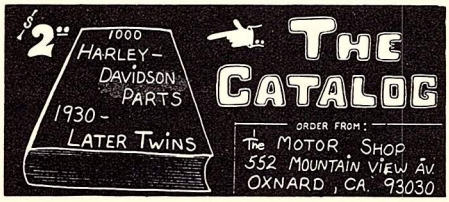

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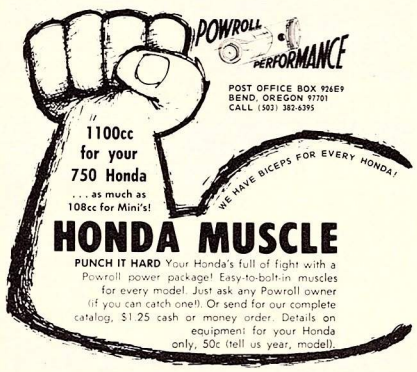
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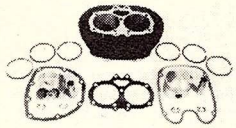

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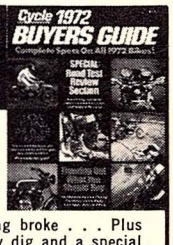

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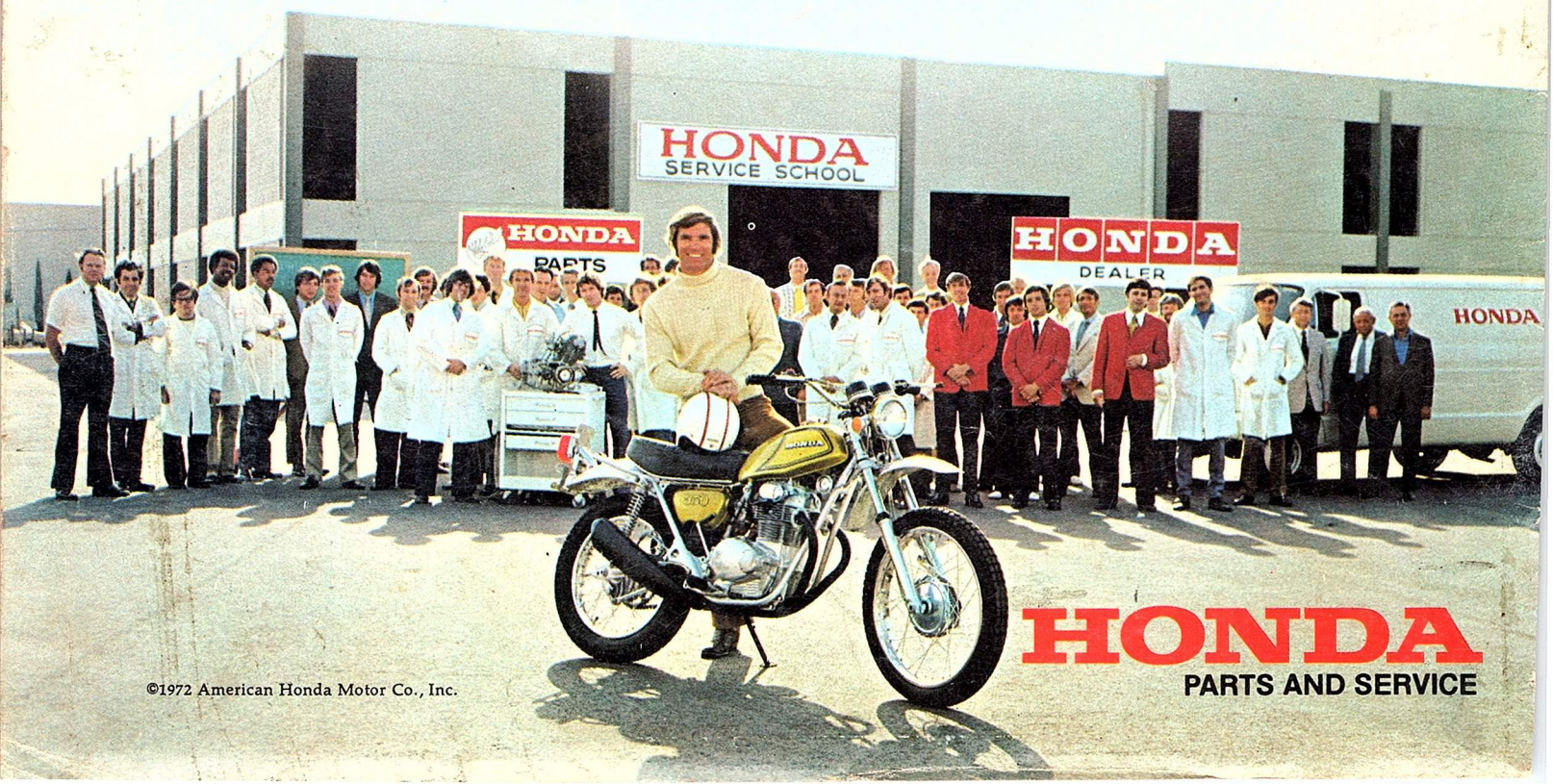

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